66

Drug Markets

January 1928

THE JOHN CRERAR LIBRARY JAN 27 1928

THE JOHN CRERAR LIBRARY

F&F

Your Analysis Of Our GERANIOL Would Show

Rose-like Odor	100%
Aldehydes	Absent
Oxidation in Air	Not Noticeable
Alcohols	100%
Citronella Odor	Absent
Acids	Absent
Treatment with Caustic Soda	No Effect

LARGE scale production has enabled us to cut the price of Fries & Fries Geraniol to an amazingly low figure. It is well worth your own trial—we will send you a pound postpaid on receipt of $2.50.

The resources of our highly efficient analytical Research Laboratories are at your disposal in helping to solve any knotty chemical problem. Neither charge nor obligation for this service.

THE FRIES & FRIES CO.
1501 West 6th Street
Cincinnati, Ohio

GENTLEMEN:

In accordance with your special trial price of $2.50, please send us postpaid one pound of

FRIES & FRIES
GERANIOL

We are enclosing our check for the specified amount.

Name .....

Address .....

City and State .....

The FRIES & FRIES CO.

Cincinnati — 1501 West 6th St.
New York — 244 Pearl St.
Los Angeles — 421 East 8th St.

SALICYLATES

Air photo of works of
The Dow Chemical Company
Midland, Michigan

PHARMACEUTICAL manufacturers know that the Dow trademark on Salicylates is symbolical of uniform purity, cleanliness and color.

Dow Salicylates are manufactured in a specially designed, completely equipped Salicylate plant. They meet the most exacting tests and are unexcelled for quality.

Dow Salicylates Are:

Acetyl Salicylic Acid, Crystals, U. S. P.
Acetyl Salicylic Acid, Powder, U. S. P.
Acetyl Salicylic Acid, Granulation
10% Starch (in colors)
Salicylic Acid, U. S. P.
Sodium Salicylate, U. S. P.
Salol, U. S. P.
Methyl Salicylate, U. S. P.
Strontium Salicylate, U. S. P.
Ammonium Salicylate, U. S. P.
Magnesium Salicylate

Write for Quotations

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

Branch Sales Offices
90 West Street, New York City
Second and Madison Streets, Saint Louis

DOW CHEMICALS

L661.051 D84 542166 272359

January 1928

Drug Markets

Established 1914

The Business Magazine of the Drug Industries

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Do You Consider Your Package?

As your package sits on the druggists' shelves does it attract or repel buyers? Does is shout "I am what you want," or does it just emit a faint whisper. After it has stood on the shelf for six months—which God forbid— what does it look like, and what are the contents like?

Package attractiveness is a science which is now winning even the most conservative manufacturers to its cause, and package closing is still another science that has forced itself upon manufacturers everywhere.

Consequently the February issue of DRUG MARKETS will give you the ways and means of bringing your package up to date in line with these new trends.

ARTHUR S. ALLEN is known as a Color Engineer and his business is the proper use of color in the design of a package. He has redesigned the products of many prominent drug manufacturers with the view of making their package more readily saleable. Hinds Honey & Almond Cream and the American Druggists' Syndicate are notable examples of his recent work. In the February issue, Mr. Allen will describe some of his recent package revisions.

TIN TUBE users realize that when they buy tubes they are really buying tin. There is one large user of tubes who recently saved $100,000 by using tubes with the tin more evenly distributed through the tubes. Surprising as it may seem, these tubes containing less tin will withstand more pressure and are actually stronger than tubes containing more tin unevenly distributed. The fact of this important investigation will be given in February.

THE UNITED STERLING COMPANY will in all probability be a fact during the month of February. The history of the United Drug Company from the days of the forty druggists who invested $3,000 each will be given in February.

VOL. XXII

DRUG MARKETS, INC.
PUBLISHERS
25 Spruce Street, New York

NUMBER 1

Editor THOMAS R. FARRELL
Publisher WILLIAMS HAYNES
Business Manager FRAZER V. SINCLAIR

Published monthly at Pittsfield, Mass., Subscription price, two dollars a year, in advance, Postage paid to all countries; three weeks' notice is required to change subscriber's addresses, and when notifying kindly give both old and new addresses. Printed by the Sun Printing Co., Pittsfield, Mass., and application Made for Entry as Second Class Matter at the Post Office, Pittsfield, Mass., under the Act of March third, 1879.

Commonwealth Products never touch the tin in which they are packed. Every can has an inner container of tough, tear-resisting paper to prevent contamination

Her Majesty~ The Woman Buyer

She wields a powerful sceptre in this world of ours. Not only do her whims and tastes determine the style of gown she wears. Practically every popular item purchased through modern retail channels pays homage to Her Majesty — The Woman Buyer.

Purchasers of flavoring materials know that this same feminine influence will play an important part in the sale of their products. They realize that the woman purchaser appreciates and insists upon quality in the articles she buys.

Specifying Commonwealth when ordering Coumarin and Vanillin is a safe way to insure uniformity and dependable quality in flavoring ingredients. In addition to this absolute uniformity of Commonwealth products, there lies at your disposal the carefully organized Commonwealth service, backed by the facilities of the nation-wide Mathieson organization.

Near you is a convenient warehouse stock of Commonwealth products. Take advantage of these "on-the-spot" facilities.

The metal seal, with which Commonwealth tins are furnished, is quickly and easily removed, leaving a tight-fitting, replaceable cover.

The MATHIESON ALKALI WORKS Inc.

Commonwealth Division

250 PARK AVE. NEW YORK CITY

PHILADELPHIA CHICAGO PROVIDENCE CHARLOTTE CINCINNATI

STOCKS IN PRINCIPAL CITIES

D&O
ESTABLISHED IN 1798

ESSENTIAL OILS

Natural

Concentrated Terpeneless

SYNTHETIC AROMATIC CHEMICALS

COMPOUNDED PERFUME BASES

For all purposes at reasonable prices.

OLEO RESINS

Ginger, Capsicum, Cubeb,
Malefern, Vanilla.

GUM BENZOIN

Siam - Sumatra

BALSAMS

Peru - Tolu - Copaiba

VANILLA

Mexican — Bourbon — South American

In ordering Essential Oils and kindred products you need never hesitate to specify "D & O". This symbol on the package together with the integrity of the house is a guaranty which will uphold your reputation gained by the quality of the products bearing your name and trademark.

Dodge & Olcott Company

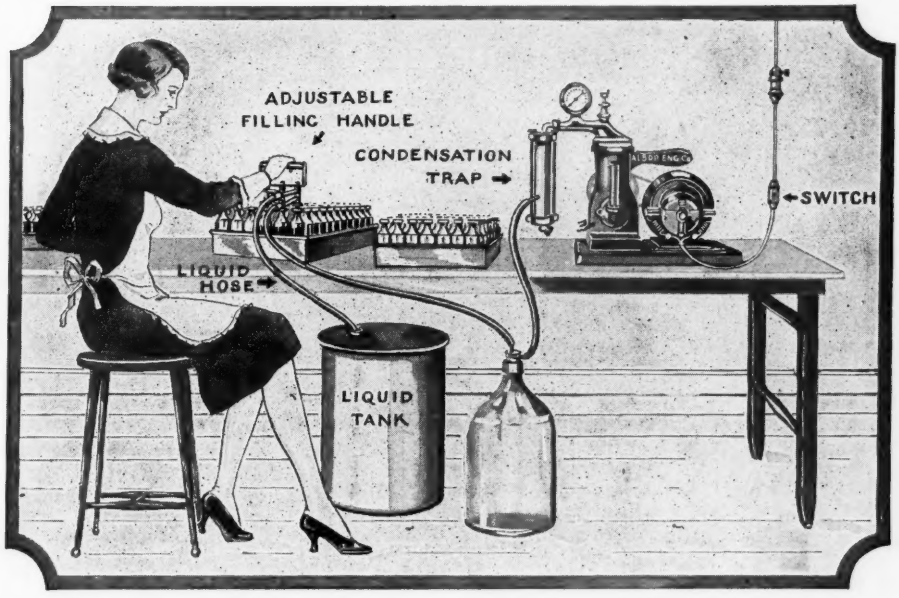
87 Fulton Street

New York

"The integrity of the house is reflected in the quality of its products."

Hy-Speed

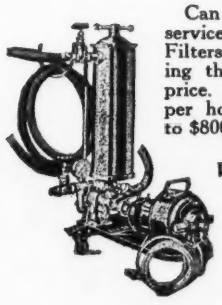
VACUUM BOTTLE FILLERS



Eliminate Waste, Labor and Expense

The speed, simplicity, and portability of "Hy-Speed" Vacuum Electric Bottle Fillers are saving hundreds of users valuable minutes in every operating hour. They operate from any light socket, saving installation cost and floor space. They fill bottles more rapidly and uniformly, eliminate waste, reject leaky bottles and are the lowest in price.

Internal Pressure Filters



Can be cleaned and restored to service in less than two minutes. Filters more material without cleaning than any filter of its size or price. Capacity up to 300 gallons per hour. Other models from $8 to $800.

Portable Electric Mixers

Are standard equipment in every liquid mixing process. Their advanced design insures a more thorough mix in much less time. They clamp to any tank, operate from any light socket, last longer and cost less.

Write for catalog of Glass Lined Tanks, Pumps and other "HY-SPEED" Liquid Handling Equipment.

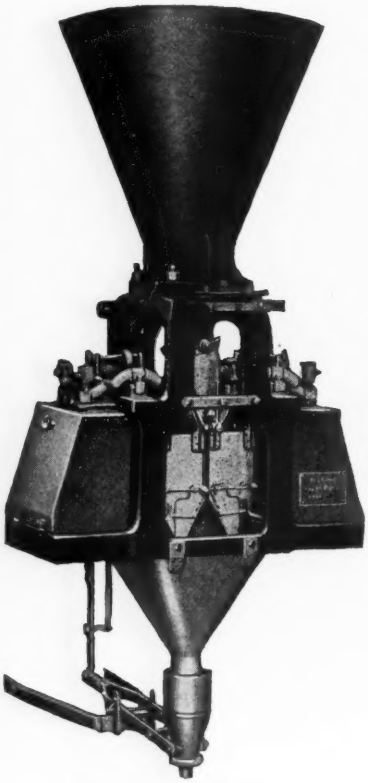
ALSOP

Hy-Speed Machines

ENGINEERING COMPANY

47 West 63rd St. New York

From Acid Phosphate to Whole Spice—



No. 200 Net Weigher

If you have bulk material to be weighed and delivered back to a bulk state, or bulk material to be weighed and delivered into sacks, packages, cartons, cans, bottles or other containers, we have the necessary machinery to fill your needs, or the experience and equipment to make it. That experience has been particularly extensive in the line of materials which flow "reluctantly", or in other words, which are not susceptible of a purely gravity feed.

Our machines have successfully handled such materials as:

Acid Phosphate	Clinker	Insect Powder	Rice
Ammonium Nitrate	Coal	Limestone	Rolled Oats
Ammonium Sulphate	Cocoanut	Linseed Meal	Sago
Alumina Sulphate	Coffee	Malt	Salt
Baking Powder	Cornmeal	Malted Sugar	Shale
Barley	Cornstarch	Milk Sugar	Shot
Beans	Cottonseed	Magnesium Sulphate	Soap Powder
Beet Sugar	Cottonseed Meal	Nails	Soap Flakes
Bone Meal	Cottonseed Cake	Nuts	Soda
Borax	Copper Oxide	Napthalene	Soda Ash
Bran	Copra	Oyster Shells	Starch
Buckwheat	Chloride of Zinc	Peanuts	Sugar
Bromo Seltzer	Cyanamid	Peas	Stucco
Cement Materials	Feeds	Pepper	Sodium Phosphate
Cereals	Fertilizers	Phosphate Rock	Tacks
Chemicals	Graphite	Popcorn	Tankage
Chickory	Gypsum	Poultry Food	Tapioca
Clay	Grain	Potassium Sulphate	Washing Powder
Cleansers	Hominy	Powdered Sugar	Whole Spice

If your product is not in this list write us fully about it and the method you now use in handling it. Our engineers will be glad to offer their assistance.

* * *

The machine illustrated has a duplex action, the material being weighed first on one side, then the other. Capacity, ½ oz. to 20 oz. Speed up to 45 per minute. Accuracy 90% balanced weights, the remainder varying not over 1-16 oz. plus or minus. Entirely automatic in operation. Send for bulletin.

AUTOMATIC WEIGHING MACHINE COMPANY
Division of
AMERICAN MACHINE & FOUNDRY COMPANY
5502-5524 SECOND AVE., BROOKLYN, N. Y.

AUTOMATIC MACHINERY

"YES, MRS. JONES, THIS SEAL IS *BOTH* A TRUE PROTECTION AND A GREAT CONVENIENCE"

TO the 20,000,000 "Mrs. Joneses" all over the country (and to their husbands) the convenience and protection offered by a modern package is a very considerable selling influence.

Your product deserves the extra selling impetus that the R-O Aluminum Seal can give it.

People like R-O Aluminum Seals. They are easy to remove and easy to replace. They are made of Pure Alcoa Aluminum—the safety metal that every woman knows in her kitchen—which does not rust nor contaminate the contents.

They provide a perfect hermetic seal, for they are "custom-made," each for its own bottle. They are put on by a special sealing machine which applies the seal, shuts out the air and forms the thread in the seal—*all* right on the bottle.

R-O Seals are available in any standard size, design or finish, and with liners suitable for every purpose. Your name or trademark may be embossed or lithographed on each seal.

We will gladly tell you how this *modern* seal will improve your package and probably effect economies for you.

R-O

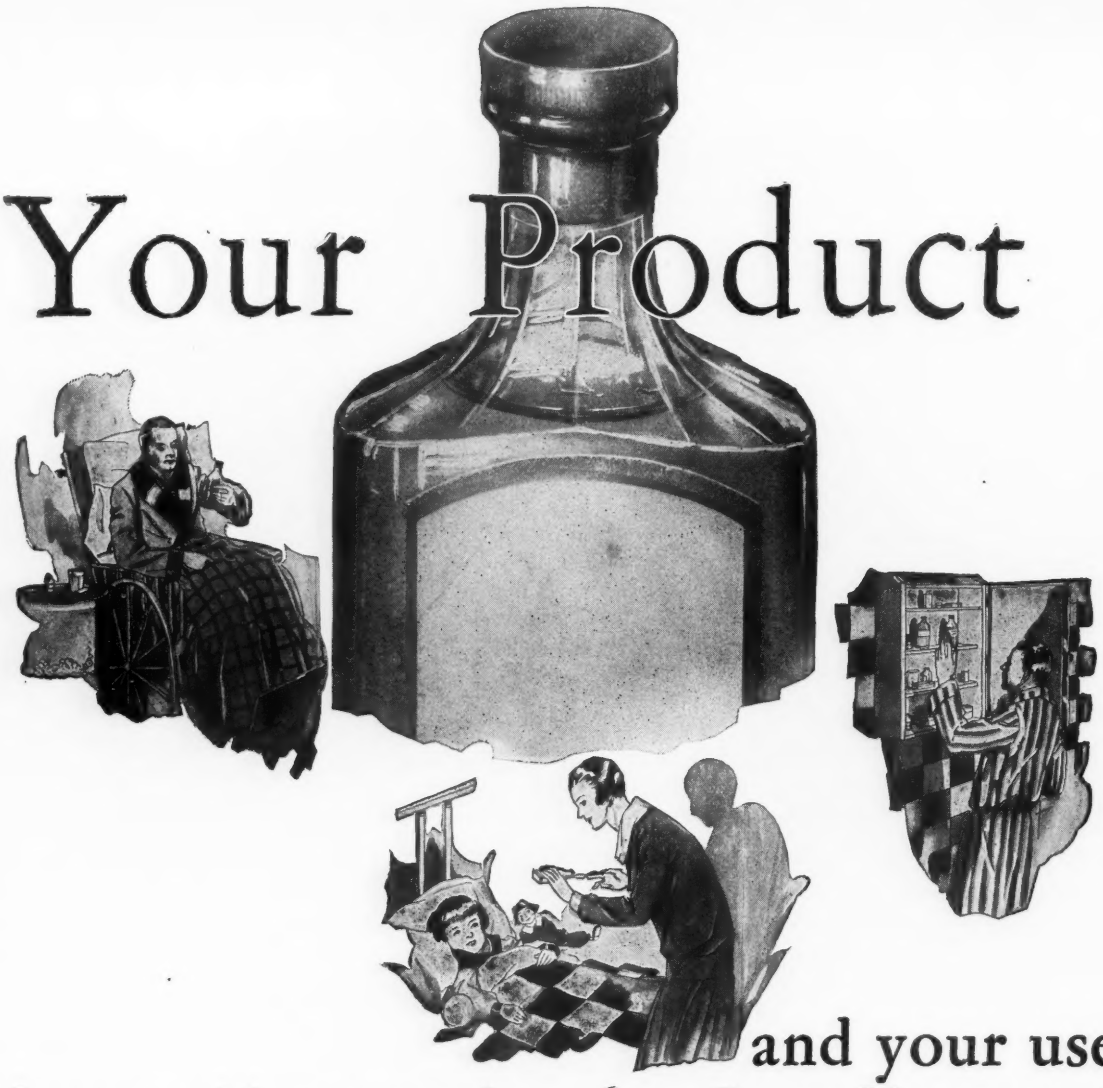
Aluminum Seals

ALUMINUM COMPANY OF AMERICA

2459 Oliver Building, Pittsburgh, Pa.

ALUMINUM COMPANY OF CANADA, Ltd., Toronto, Montreal, Canada

Your Product



and your users deserve this protection that CAPES-VISCOSE give

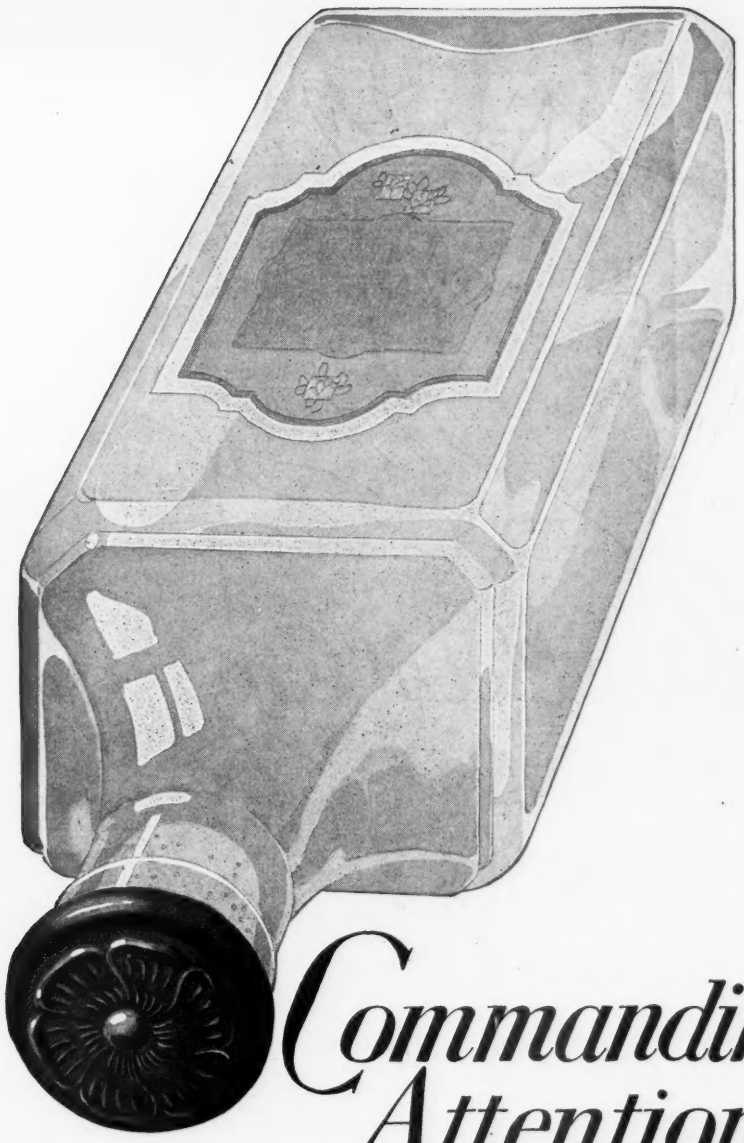
DO NOT think that consumers will fail to appreciate your efforts to protect them from Dilution, Substitution or Tampering of your products. No article of trade enjoys more personal use in the home or sick room than drug products. That's why users exert such unusual care in choosing their brands—selecting only those products that give evidence of genuineness, of purity and non-adulteration. In a word, products that are *sealed.* Sealed with Capes-Viscose, your product is absolutely protected against every tampering-evil prevalent in the industry today. Capes-Viscose are hermetical seals, ***that cannot be imitated.*** Capes-Viscose are proof-apparent that this is so in the customer's eyes. ¶ Let us send samples. See how Capes-Viscose add to the appearance of your bottles. See how simply they are applied. And find out how little this method of bottle protection really does cost.

CAPES-VISCOSE, INC.

Sales Offices: 134 Madison Avenue, New York
Main Office and Factory: Delawanna, New Jersey

CAPES-VISCOSE

SELF-FIXING BOTTLE CAPS



Commanding Attention

To lift your package above the mass of others—to give it display value that will command attention and create a favorable impression—that is your problem. Solve it with Armstrong's Embossed Top Corks.

Armstrong's Embossed Top Corks add a spot of color that arrests the purchaser's eye. Their distinctive appearance gives a definite impression of quality. And the ease with which they are removed and replaced, giving a tight seal at all times, has made steady users out of many casual buyers.

With all their added advantages, Armstrong's Embossed Top Corks are not expensive. Samples and prices will be submitted promptly on request. Armstrong Cork Company, 132 Twenty-third Street, Pittsburgh, Penna.

Armstrong's EMBOSSED TOP Corks

When the *Metal Cap* Determines the Sale

REMAINING at the top in a highly competitive field requires more than quality products. It demands customer convenience and freshness of product as well. Right here is where the convenience of the readily opened Amersealed container with its positive assurance of original freshness is the turning point in the demand for products—sealed with this superior cap. Its use on your containers keeps you abreast with your many competitors already using it and places you far ahead of competitive goods not sealed with it. It can be furnished beautifully lithographed in colors, making a lasting advertisement.

Want a sample of the Improved Amerseal?

The double dot dent does it.

THE AMERSEAL CAP

REG. U.S. PAT. OFF.

A QUARTER TURN SECURELY SEALS

A QUARTER TURN QUICKLY UNSEALS

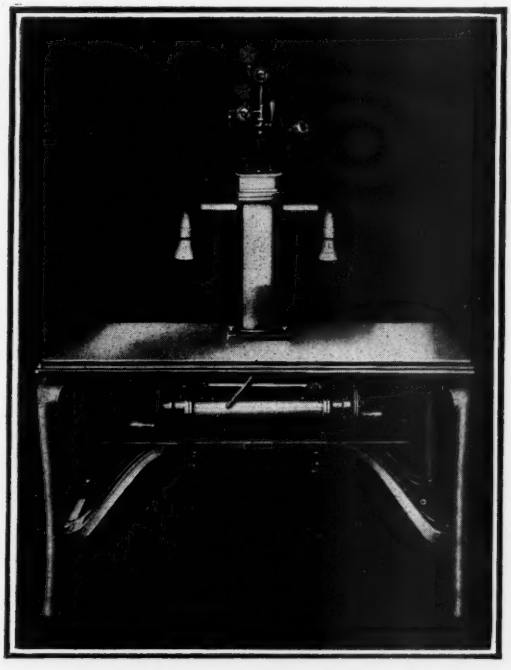
AMERICAN METAL CAP CO.
BROOKLYN, N. Y.

Branch Offices

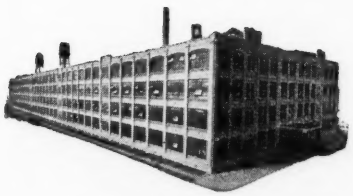
Chicago	St. Louis	Portland
Cleveland	Los Angeles	Seattle
Detroit	San Francisco	Louisville

STAFF

ANNOUNCEMENT



The Fee Process Weighing and Filling Machines



In this plant are produced many of the world's finest automatic machines to meet production needs in the food products, chemical, tobacco and printing industries.

THE American Machine & Foundry Company has acquired the license to manufacture and sell the complete line of Fee Process Weighing and Filling Machines heretofore manufactured and sold by The Lamb Corporation.

To the present and potential users of these ultra-modern automatic machines there are two significant facts to be noted in this announcement:

1. Manufacture and sales will be handled by an organization possessing ample facilities, as evidenced by a background of twenty-seven years of successful work in the design, construction and adaptation of automatic machinery to many varied industries.
2. Laboratory research and development work on these machines to adapt them to new uses will continue under the direct supervision of Mr. Fee himself.

Succeeding advertisements in this series will discuss the application of these machines to various types of work. Meanwhile, let us know your problems, and competent engineering advice will be furnished.

AMERICAN MACHINE & FOUNDRY COMPANY
5502-5520 SECOND AVE., BROOKLYN, N. Y.

AUTOMATIC MACHINERY

ALCOHOL THROUGH THE AGES, NUMBER VIII

IN THE CAUCASUS

In the Southeastern corner of Europe, between the Black and Caspian Seas, lies a region known as The Caucasus.

Sometimes called the Cradle Land of the White Race, this small, almost forgotten area has always presented one of the most heterogeneous conglomerations of peoples, languages, jargons, creeds, and religions in all the world.

As out of this varied horde grew the Caucasian or White division of mankind, so, too, out of their varied necessities and experiences was produced the most efficient type of primitive still—the worm-tub—which they used in distilling spirits (Skou) from the milk of mares.

* * * *

In the United States, the Kentucky Alcohol Corporation was a pioneer in the production of Industrial Alcohol, its parent Companies having been in the business long before the Tax Free Alcohol Act was passed in 1906. Many modern methods of efficient and economical distillation have been developed by Kentucky, which today are important factors in supplying the needs of Industry.

KENTUCKY ALCOHOL CORPORATION

30 BROAD STREET * * * NEW YORK CITY

Address Sales Representatives, Listed in Our Former Advertisements, and Those Which Follow, for Your Industrial Alcohol Needs.

NOTE: This is number SIX of a series of advertisements which will appear in this and other trade publications. We have had so many comments and requests for copies of these advertisements that we have decided to issue the entire series in booklet form, after they have appeared in the publications. As the edition will be limited to the number of requests on hand at the time of publication, we invite you to write for your copy now—it will be sent FREE when the booklet is completed. Address the Kentucky Alcohol Corporation direct, or any one of our sales representatives, whose names appear regularly in this space.

Famous Products Perfectly Delivered

Depend upon it—there is real significance in the fact that Kolynos Tooth Paste reaches its millions of consumers in tubes of Alcoa Aluminum

ALUMINUM Collapsible Tubes

HIGHER quality with a material reduction in costs—this is the unique achievement of the perfected Alcoa Aluminum Tube.

Made of the famous safety metal that every housewife knows and uses in her kitchen, Aluminum Tubes are thoroughly sterilized and are non-contaminating, non-rusting and durable.

They finish beautifully and print beautifully—retaining their original shape and fresh appearance through all stages of delivery. They embody a perfect balance of strength and flexibility.

Being made of a less expensive basic metal, the price of Aluminum Tubes is consistently lower—is stable—dependable. They are, ordinarily, easier and cheaper to fill.

Their lighter weight automatically cuts shipping costs both to the manufacturer and the distributor.

Their greater strength insures the safe and satisfactory delivery of the products they carry.

Aluminum Company of America

2459 Oliver Building, Pittsburgh, Pa.

Offices in 18 Principal American Cities

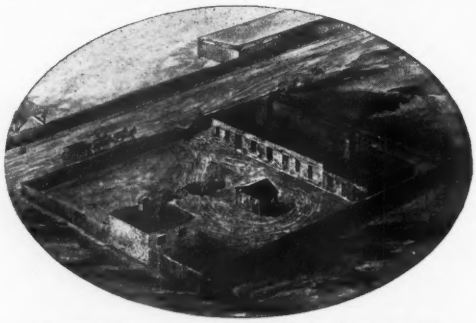
Technical Service

To packers wishing further information we offer the technical knowledge of our laboratory force. The services of these men are available upon request and entail no cost or obligation.

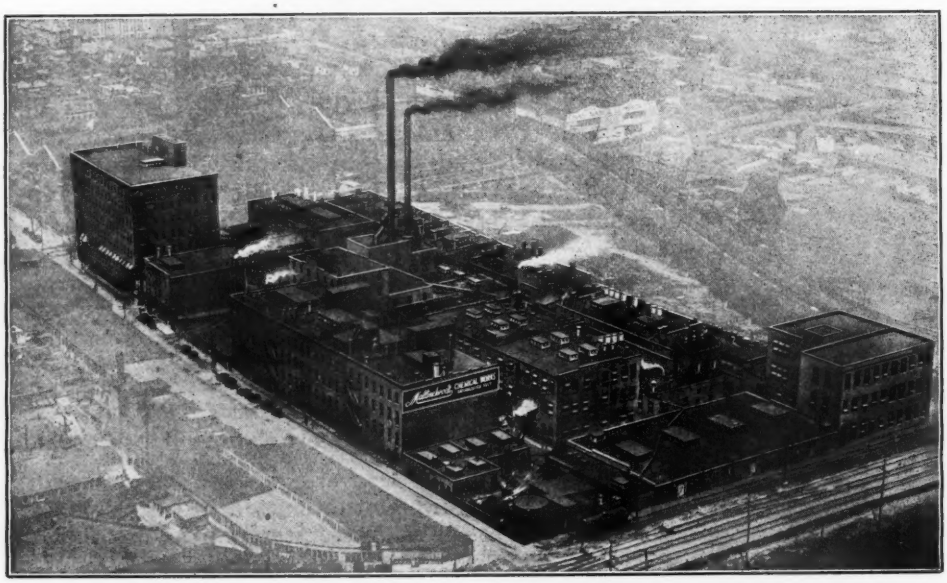
A.C.O.A. ALUMINUM

ALUMINUM IN EVERY COMMERCIAL FORM

Mallinckrodt
CHEMICAL WORKS



Original Plant as established in St. Louis in 1867



Plant in St. Louis 1927

Eastern Works: Jersey City, N. J.
Eastern House: 72-74 Gold Street, New York City
Canadian House: Montreal, Canada
Philadelphia Branch: Philadelphia, Pa.

Branch Offices:
Havana, Cuba Buenos Aires, A. R. Chicago

CONVINCING PROOF OF 60 YEARS PROGRESS
IN THE MANUFACTURE OF
FINE CHEMICALS

Drug Markets

Vol. XXII JANUARY 1928 No. 1

Charting the Course

AT the last meeting of the N. W. D. A., Charles L. Huisking, made a significant statement. For years he has read an annual report on drug price trends to this organization and his mastery of this complicated subject has enabled him to make a notable contribution. Nevertheless, raw material markets have become so stable in price, that his material has become each year less valuable and he has shrewdly sensed the evaporating interest of his audience.

"I THEREFORE recommend," he said, "the discontinuance of these reports and move that the time hitherto devoted to them be better used in consideration of the more pressing problems of sales."

VERY aptly this sums up the situation. The emphasis of the drug industry's problem has shifted from buying shrewdly to manufacturing efficiently and selling more successfully. No need to review the revolution taking place in the jobbing trade. While no prophet dare foretell what the outcome of these distribution changes will be, every manufacturer in the medicinal and toilet goods industries feels the grinding pressure of slipping cogs in our distribution system. It is quite as apparent that there are changes in merchandising methods, passing out of an era when diet, massage, exercise, sunbaths and what not were supposed to be cure alls, we find now that scientific laboratory research in biology and chemistry is dominating medical practice, resulting in radically different formulas, plant processes, and sales appeals. No need again to remind us that new fashions in cosmetics have almost doubled this branch of the business every twelve month. Nor is there any executive in the drug industry who has not had driven home to him the plain fact that manufacturing medicines or perfumery differs little from any other industrial process and that in this day the plant of the drug manufacturer must be run at top speed efficiency. More effective, more economical means of heating, mixing, packing, shipping, daily replace practice that but yesterday was the best available.

IN full recognition of these plain facts, DRUG MARKETS must change to serve the industry. Like Mr. Huisking, its function can no longer be that of a price and news reporter. It must give its readers real service of facts and figures, new ideas and counsel in these pressing present day problems of production and distribution. Therefore, with this issue it ceases to be a fortnightly business newspaper and becomes a monthly magazine of the drug industries. It will not neglect the problems of purchasing, and by analysis and survey of the raw material fields will uphold its reputation of the past fourteen years as the leading authority, but it will extend its activities to cover the latest developments in plant operation and sales. Its larger size and more attractive makeup are but outward signs of greater service to the drug industries.

America First

Although the idea of "Buy British Goods," "Consume Imperial Products," "British Made by British Workmen" has never been formally organized into a co-operative campaign for American producers and manufacturers, nevertheless in an indefinite sort of way most Americans in industry will subscribe to the belief that it is to the mutual advantage of all of us to support the "Made in U. S. A." label. In the drug industries, where raw materials and finished products are so interwoven that the relationships of producer and consumer are bound together by the strongest bands of self interest, this support of the American manufacturer should be the first, red-letter tenet of the buyer's creed.

As a matter of plain fact, however, this idea of supporting American industry first is pure theory—we almost wrote for 'theory' a shorter, slangy word of greater force.

Five years ago we had four American manufacturers of creosote carbonate. American carbonate is off the market to-day. The most important American maker stopped manufacture four years ago. His last sale was at $1.45: he is ready to-day to turn out 50,000 pounds (our American requirements) at $1.60 at $1.75 a pound. Imported material sells at $1.40 at $1.50 a pound. He stopped only after one of the biggest American consumers had forced him on threats to lower his price and extend his deliveries on a contract order. That same American consumer has recently been pushing his own goods most vigorously on the plea that they are American-made. This is the ridiculous spectacle of the American perfumers begging Congress for a higher tariff on cosmetics and protesting against a tariff on synthetic coal-tar aromatics all over again.

What kind of support is being given to-day to American antipyrene, barbaturic acid, benzyl benzoate,—no need to go through the whole list alphabetically. To select a timely example, can any sane man in the American drug industries doubt but that it would strengthen the hands of the American quinine producers when they are purchasing bark, if they were in control of all the American market for salts, or that foreign interests would rather sell salts here that ship bark in for manufacture into salts ?

With the increasingly centralized control of all sorts of fine and aromatic chemicals in Europe, is it not wise to have American competition in this market ? Have we so soon forgotten what it means to be cut off for foreign sources of necessary drug manufacturing raw materials ? Do we not remember the heights to which prices soar under such embarassing and costly conditions ?

Theoretically, there is no flaw in the argument. Practically, there is no faith in our actions.

A New Type of Trade Mark

The Court of Appeals has decided that The Charles H. Phillips Company is sole owner of the term "Milk of Magnesia," and that it is the trade mark of that company. The mark was fought on the grounds that the patent covering the process of manufacture expired prior to the application of the trade mark act, and that, therefore, both the process and the mark became public property. But the court has decided that since the mark was not used by anyone other than the Phillips company during the time between the expiration of the patent and application of the trade mark act, the mark was not public property and is still the property of the Phillips Company.

The attack on the mark was not the result of restriction of its use in this country since many manufacturers have for many years used this term to describe their goods. But in the export markets of Great Britain, Cuba, and other countries, Milk of Magnesia has always stood for goods of Phillips manufacture. Only by attacking the trade mark successfully in this country could the foreign control be broken.

The Phillips company has established its rights and therefore the foreign markets will continue under Phillips control. But how about the home market ? Officials of the Phillips company state that they have not decided upon a plan of protection. They admit being very lax in protecting its trade mark.

The truth of the matter is that so far as this country is concerned the mark is probably lost forever. Many manufacturers here have used the mark freely, and without hindrance for a long period of years. After a trade mark has been used by other than the owner for a period of years without the owner attempting to protect his mark, the mark also becomes the property of those who have used it. The original owner can still stop new people from using the mark, but he is helpless against those whose names have become connected with it. The "Milk of Magnesia" case furnishes a pretty example of the result of failure to protect trade mark rights.

Manufacturers Meet Chains

If broadening activities on the part of chain drug stores is a menace to the independent retailer, it is no less threatening to the manufacturer without chain store connections. The independent retailer gets some aid from the co-operative wholesaler, as from also service jobbers who are readjusting themselves to aid the independent retailer to meet this competition. But the co-operative movement with its private brands only increases the competition that the independent manufacturer must meet.

However, the advent of the United Sterling Company does not find progressive manufacturers wholly unprepared. On the contrary, plans probably laid about the same time the long heralded merger was conceived, will likely be in operation shortly after the merger is complete. Those manufacturers who are to survive, or at least those who are to maintain their present positions in the industry, must adopt themselves to meet changed conditions just as the wholesalers have been forced to readjust. The sales resistance to their products in a large part of the retail market has materially increased, and this resistance must be overcome.

Of the methods to be employed, large expansion is indicated in some directions. Aggressive marketing of a broader line with salesmen specializing in various groups of the line, rather than attempting successfully to sell a thousand items, should bring results. Adaption of chain store and co-operative methods in marketing products to compete with specialties which carry a long margin for sales and profit to the manufacturer, offers a fertile field of activity for those who are well established with the independent retailers. The setting of the selling price on the volume of business that can be obtained, and then passing the long margin of profit absorbed by the specialty manufacturer along to the retailer, is a well known American business principle.

The thought that manufacturers may buy chains of stores has come to the many minds. Such a procedure is not yet considered seriously. This would radically change the status of any manufacturer and would obviously remove many of the distinct advantageous that independent makers enjoy. For a manufacturer to enter into direct chain store merchandising would obviously increase his difficulty in selling the independent retailer.

Prominent among the advantages accruing to the independent manufacturer, is his brand building ability. Chains are admittedly poor builders of brands. It is only a decided consumer preference for nationally advertised goods that forces chain stores to handle the products of the independent manufacturers against their will. Accordingly even though the chains increase both in number and scope a certain part of the chain store market will always be held by the independent manufacturer, although the cost of holding it through advertising will increase.

Container Problems

No problem confronting the production departments of drug manufacturers, is of more intense interest than the efficiency of the various containers that package their products. Independent tests are constantly being made by manufacturers to solve the problems that are peculiar to their products, and also to solve difficulties that are of vital concern to them, but not so vital to the suppliers of the containers.

Within the past year much energy has been devoted to proper design of the metal cap. To obtain a proper seal one manufacturer decided he needed a thicker piece of sealing material in his cap. This called for a deeper cap. The cap was not standard, but is being made. New machines were necessary properly to apply the cap. His problem is solved only until something better or cheaper is discovered.

Another manufacturer finds that collapsible tubes contain too much tin in some places. He makes a tube with enough less tin to lower the cost of the tubes by fifty cents a gross. Upon testing the strength of the new tube under pressure he finds, for easily explained reasons, that the cheaper tube is stronger than the more expensive one.

The problem of a suitable liner for metal cap has long been but a partially solved problem. Liners have been used for products that would obviously attack the liner in question before a very long time. Some manufacturers have discovered substances that will withstand the action of their products, but each product has been a separate problem. A universal liner, such as has recently been discovered, is a long step forward.

A broader scope of drug products can be included in the manufacturer's line only if these products can be stabilized so as to prevent deterioration between the time that the

products leave the manufacturer's plant until they are consumed. Research in this direction is therefore of prime importance to manufacturers since it makes possible the packaging of products that were formerly freshly prepared by the druggists upon demand.

More Research Needed

A real earnest drive is being conducted by the Food, Drug and Insecticide Administration of the Department of Agriculture to determine what preparations containing cod liver oil and also containing the so-called concentrates of cod liver oil justify the claims made for them. When the investigation is completed, it is contemplated that certain of the products will be radically revised in their constituents or will pass out of existence.

Nothing that could be done would perform a more valuable service to the drug manufacturing industry. There has been much misleading information regarding the various preparations purported to contain the now famous vitamins ever since they were discovered. Some clearing house for these claims has been sorely needed for a long time and it is a welcome sight to see the Government taking the ncesesary steps.

At the same time it would be well if the fact could be determined as to just what virtues cod liver oil possesses. Is it just the vitamins that are responsible for its continued use, or is there something else ? Certainly vitamin A is not a unique property of the oil since this is present in all foods; vitamin B can also be found in certain foods. But scientists have determined that vitamin D—not present in foods, but present in cod liver oil—gives its unique properties, and they claim that when they can transfer this vitamin to other carriers, or produce the anti-richitic value which it possesses, synthetically in other substances, they have replaced cod liver oil.

Cod liver oil has been fed to babies to prevent rickets, but grown people without number have taken cod liver oil with meritorious results. It is not to be expected that the anti-richitic virtues of the oil as such could be of value to adults whose bones are formed. It is more than possible that additional research is necessary to determine what other virtues vitamin D possesses when consumed, or whether it is not vitamin D that gives cod liver oil its virtues.

Weakness in glycerin has become still more pronounced. But producers see in the present lull in glycerine buying the ultimate consumption of those large stocks of C. P. material bought by drug manufacturers during the bull market of last year. The movement of drug products into consumption has been well up to normal during the past year and glycerin consumption was therefore up to normal. The disappearance of these stocks will have a healthy influence on the market with a return to more stable conditions.

In the purchase of John T. Milliken Company by Abbott Laboratories and the acquisition of the Dr. Lyons interests by R. L. Watkins Company, these companies have taken over a line somewhat varied from their present list.

However, in this respect the announcements did not cause any great surprise, being similar in many ways to other such combinations which have been in vogue in the industry of recent years.

{ *Ten Years Ago* }

(From "Drug and Chemical Markets," January, 1918)

United Drug Co. reports net profits of $403,130 for November, 1916, which compares with $266,616 for the corresponding month of last year.

John Emory Andrus, of Reed, Carnick & Andrus, New York Pharmacal Association, Arlington Chemical Co., and Palisade Manufacturing Co., has incorporated the Surdna Foundation through which he will distribute his fortune, estimated at $40,000,000, to charities.

Professor Joseph Price Remington, chairman, Revision Committee, U. S. Pharmacopoeia, and dean, Philadelphia College of Pharmacy, died last week.

Merck & Co. has increased its capitalization from $250,000 to $1,000,000.

Antoine Chiris Co.'s 150th anniversary celebrated by the American branch in New York. Burton T. Bush is president.

Henry Schieffelin Clark, treasurer, William Jay Schieffelin & Co., died January 3.

W. S. Vick Chemical Co. incorporated at Knoxville, Tenn. with a capital of $100,000 by H. B. Gilbert, W. S. Vick, and N. G. Gilbert.

J. L. Hopkins & Co., New York, increased its capital stock from $100,000 to $300,000.

Edmond Fougera, owner, Fougera Chemical Laboratories, Brooklyn, died at the age of 62.

Lehn & Fink, New York, plans the construction of addition to their six-story Brooklyn plant, estimated to cost about $60,000.

American Drug Manufacturers' Association seventh annual meeting in New York: the keynote of all discussions was the effect of the war upon the pharmaceutical industries.

Harry B. French, of Smith, Kline & French Co., elected president, Philadelphia Drug Exchange.

R. W. Greeff & Co., New York, incorporated with a capital stock of $200,000 by F. E. Dixon, W. N. Barnum and R. W. de Greeff.

Robert R. Ellis

faces the facts on

DISTRIBUTION

Some minds find it impossible to face the facts says Mr. Ellis, who declares that survival of the fittest is still with us, and points out how the drug industry must adjust to meet present day conditions.

SOME years ago, a distinguished member of the President's Cabinet called on the late Frank A. Munsey. In the outer office was a nervous young man—a sort of private secretary—who informed the caller that Mr. Munsey was engaged. A few minutes later, Munsey came out and saw who was waiting, greeted him effusely. After the caller had gone Munsey rang for the secretary and asked angrily,—"What do you mean by keeping Mr. ———— sitting there like an office boy?" "Why I thought it was Mr. Tom Reed." "You did," asked Munsey, "You know that Mr. Reed has been dead for five years." "Yes sir," replied the secretary, "and that is why I could not understand his being here."

In other words, some minds find it impossible to face the facts and the difficulty is increased immeasurably when it is necessary to distinguish between what only appears to be and what actually are facts.

The distribution of a product is complicated by so many new factors that the old conception of supplying and exceeding demand has been succeeded by the new question of creating a demand for a superabundance of supply.

If I may use a parallel, which is appropriate to the problem, I shall liken industry to a great transcontinental railway with its right of way, its bridges, its roadbed, its track, its rolling-stock and its magnificent terminals built at an enormous expense and contemplated for a traffic, which is much less than its capacity.

As a result principally of the War, I have heard various estimates of the additional manufacturing facilities which were created. One has a considerable choice of estimates, but that which has attached itself to my mind is between one-third and one-fourth more than the facilities which existed in 1913.

While our growth in population has been material, it is only about 16 per cent above that of 1913; but accepting 30 per cent. as the increase in the facilities for manufacture, a capacity exists seriously in excess of what might be called the normal demand based on the pre-war rate of production. Please let me state firmly that I do not offer these percentages or the interpretation of them as other than suggestive. The population increase is based on more or less accurate estimates, while the increase in manufacturing facilities is guess pure and simple,—not to be regarded as correct for any individual industry; but the picture although somewhat blurred, nevertheless is before us and its outlines may be recognized.

This is the distribution problem and I call it your problem because when something is produced for which there is no immediate demand the appropriateness of comparison with the railroad, which has not sufficient traffic to keep it busy, is self-evident.

What then do we see ? We see exaggerated forms of competition. We see extraordinary displays in advertising at extraordinary costs. We see new methods of distribution manifesting an extraordinary growth. And we see that latest ghost, which, unlike Hamlet's father, walks all the time—Installment Selling:—the one which is not appeased by anything less than the payment of next year's income for this year's product.

Please understand that I am not a "calamity howler." There is a bright side to every cloud and every new manifestation in distributive methods has both an economic reason and an economic justification. The new method of selling by direct mail advertising not improbably will result in a lessened cost of distribution. The extraordinary display of advertising has not increased materially, if at all, the cost of merchandise in such a measure as to burden the consumer. House-to-house canvassing, while we do not know its cost of distribution precisely, appears not to exceed greatly the costs of other methods.

Installment selling when rationally conducted and when surrounded by the ordinary safeguards of credit has been shown a great improvement upon the more or less irresponsible open book accounts which have prevailed in the past.

This forced competition has exerted and will continue to exert a pressure which results in lowered costs of production; and these lowered costs will in time have a profound effect upon the retail price of merchandise. But even more closely associated with my topic "Distribution" is the pressure which competition exerts to induce exact studies into selling costs. Let us give you a few examples.

One of the results of post-war readjustment was hand-to-mouth buying, barely keeping pace with current demand. This imposed radical changes, transforming prevalent practices. The retailer buys less. The multiple warehouses, represented by his stock rooms and display shelves are no longer overcrowded. His reserve stocks the jobber may carry. But jobbers' warehouses are no longer bulging. They, too, are buying in small quantities. Their reserves the manufacturer must care for. But the manufacturer protests. He cannot regulate his production and adjust it to uncertain demand. He cannot anticipate his requirements for material. He cannot manufacture a steady flow of goods without assured outlets to relieve his stock rooms. He looks for relief. Some seek it in direct selling. Some turn to chain stores. Some try other means. There is talk of supplanting and dispensing with various intermediary services. But all of these efforts have been groping and uncertain. The growth of chain stores and buying chains, impelled by War deflation and stimulated by certain economics the chains effect, has been one of the outstanding developments of recent years. No one knows how far they have expanded; none would dare predict how far they will extend.

Memphis building of The Hessig-Ellis Drug Company—the service wholesaler of which the author is president.

Coincidently, jobbers have been readjusting their operations, concentrating efforts, reducing lines, seeking closer correlation between stocks and demand, simplifying services. Some instances may be interesting enough to warrant citation.

One jobber has cut his lines one-third, his territory one-quarter, his accounts one-half. He has concentrated his buying, concluding that he could require from the sources of his supplies services which are essential to him only if the volume that he bought justified and supported such necessary services. He presented this concept to his customers. They could require services of him only when they bought sufficient to warrant these services. Their purchases should be in quantities and at intervals that permitted economical handling. He shared his savings with them and saw his volume increase, in the face of general decreases among competitors, until it practically equalled his 1920 peak volume.

Another jobber ascertained which lines paid him a profit and which he handled below cost. He displayed his figures to his retailers. He showed them that the items that returned him a profit were handled by them at a profit; that the items that he handled below cost, they sold at a loss. So he induced them to concentrate their buying on profitable lines and to reduce their stocks of unprofitable lines. They benefited mutually.

Utilizing Credit

Another jobber attacked his credit situation. When goods left his shipping floor title passed to consignee. From that moment until a check was actually deposited in his bank in payment, more than 60 days generally elapsed. "If I am giving 60 day credits to a number of merchants, I can distribute these credits to better advantage." He called on his best accounts. He proposed to them that he stock their shelves with a complete array of the goods which they required. He would retain title to the goods and they should pay only for the goods sold. In effect, he transferred the stocks he formerly carried in his warehouse to the multiple warehouses provided by the dealers' storerooms and shelves, maintaining in his warehouse only the necessary reserve stock. He transformed his salesmen and developed a new function for them. They visited the dealers, took inventories of their stocks. On these inventories, bills were submitted and immediately paid. Precise information was obtained as to the rate of flow of every item carried. Meantime the salesmen took note of any instance where an exceptional sale for any item developed. The salesman inquired what method of presentation and promotion produced this exceptional sale. Then as he made his rounds, each salesman informed his merchants how they might develop an equivalent sale. Through precise stock control, through multiplied promotional methods which had proved successful, this man was able to control his buying and confine it to items that move rapidly and so obtain maximum turn-over on his investment. The result: greatly increased profits, elimination of credit and collection difficulties, minimum selling effort and expense, minimum handling, delivery and

storage charges, stable and satisfactory trade relations—in short, a transformed business, operating smoothly and successfully.

Volume and Items

In a certain chain of stores it has been developed that practically 80% of the volume of all sales derive from 20% of the items sold. This applies in all lines, in all departments. And it applies as well to prices, to styles, to materials, to sizes and to colors. One would expect to find an exception, if anywhere, in the sale of women's suits. Let's take an actual record. In the week of January 5th of this year in a leading department store 87% of the suits sold were in four price classifications—12 price classifications are maintained, 307 suits out of 353 sold were at four price levels. The following week these four classifications sold 81%—300 out of 369 suits sold. The third week, the percentage in these classifications dropped to 73%—176 out of 243 suits sold. The drop resulted from the store policy to mark down quickly slow moving goods,—so exceptional bargains were offered at an unusual price, distorting the normal sales. The record of the previous year showed in January 81% of the sales in those four price classifications; February showed 79% and March 50%. The record in March resulted from general mark-downs in a seasonal clearance sale, which distorted the normal flow. Not only was this the experience in styles, in materials, in sizes and in colors. Certain materials, certain sizes, certain colors and certain styles prevailed overwhelmingly.

New York warehouse of Liggett's Drug Stores—the largest drug store chain in the country.

What does this show ? It certainly shows that popular acceptance of an article results in rapid turnover. Failing such popular acceptance, goods stagnate on the shelves and discriminating buyers will not handle them. These stores will compel emulation of their methods. They will precipitate the elimination of heedless competitors. Successful manufacturers must be tied up with successful customers. Neither can be successful unless they are tied up together. The two gravitate toward each other. So manufacturers, to be successful, must discover the elements of success in their customers if they are to maintain a permanent, dependable and growing business. Alert manufacturers are looking for evidences of these elements of success and are directing their sales efforts to enlisting progressive merchants as the outlets for their goods.

To this end, an alert manufacturer recently examined his distribution in a number of cities and charted his findings. In each city he found that over 96% of his sales were made to half of his accounts and less than 4% to the other half.

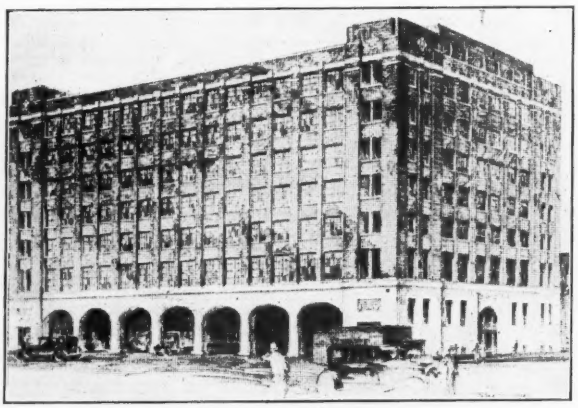
Results Vary Slightly

The results varied only fractionally in different cities. The manufacturer sold direct to retailers. The results interested others. Investigations ensued. A distributor, handling 9 lines for 9 manufacturers, sold each of the 9 lines in practically the same ratio—95% to half of his accounts and 5% to the other half. The difference between the lines were fractional. The composite of these 9 lines changed the percentages somewhat, but of the composite sales, 89% were to half of the accounts and 11% to the other half. This record repeated itself with slight variations in a number of cities. Further investigation of jobbers' sales followed. Taking 10 leading lines which sold in largest volume and charting the sales, developed practically the same distribution for each of the lines. Of each line, half of the accounts bought 95% of the volume and the other half bought the remaining 5%. Aggregated, the percentages dropped, but still half of the accounts bought 80% of the volume and the other half bought the remaining 20%. It is perfectly obvious that the cost of selling, the cost of handling, delivery and other accessory expenses were excessive for the half which bought the insignificant part of the total volume of sales. Further collection and credit expenses was almost confined to these smaller accounts. If expenses of selling, handling, delivery, credit, collection and other charges, were allocated,

all of these smaller accounts would show that they returned an actual loss. Profits earned in serving the larger outlets were in part dissipated by undue extension of distributive effort. What clearer evidence of the value of concentrated, selective distribution could be evinced ?

Need for Volume Production

American business is committed to the principle of volume production. Only by volume production can the fruits of labor be distributed and standards of living set up by American workmen be maintained.



New Philadelphia building of Philadelphia Wholesale Drug Company—one of the leading cooperative wholesalers.

No less will be tolerated. American business is committed to the principle of multiplying the fruits of individual labor by harnessing it to mechanical appliances.

So, too, American business is committed to the expansion of power and its more expert application, to the development of improved and more efficient machines.

American business, seeking to reduce unit costs, has displayed astonishing ingenuity in accelerating the flow of goods in fabrication and in straightening out the lines along which this flow moves. Congestion in the point which interrupts or retards flow is not tolerated for long. Indirection does not continue for long. Materials required at progressive points in production are distributed and so synchronozed that they arrive at the point where they are required at the time and in the quantity needed. Failure of requisite materials at any point in the line of manufacture would not be tolerated long. There are still glaring deficiencies in manufacturing methods and wastes are rampant, but the principle is so engrained that no manufacturer fails to recognize it, even when he employs it imperfectly.

Manufacture and Distribution

It is impossible to dissociate manufacture from distribution. The goods produced must be moved to consumers. Profits earned by efficient fabrication must not be dissipated by retardation in the movement of the product from factory to consumer. Essentially, the distributive machinery is only a continuation and extension of the fabricating machinery. Deficiencies in the one offset and vitiate efficiency in the other. The whole structure is a unit. But unfortunately, while we know much of one part of the process, we know little of the other.

The whole structure is so vast, so vague, so complex, that the inclination is to turn away from it and leave efforts to simplify and understand it to be isolated, fragmentary impulses of a few progressive minds, active in their own interests, but dealing with a segment of the problem. This tendency is defeatist; it represents surrender. But it merely postpones the day when an acute and widespread disorganization will compel attention. Why not analyze the processes, reduce them to their essential components, dissect specimens, isolate the germs of waste and failure, stimulate vital processes and promote healthy, sturdy, progressive growth ?

Reduced to its simplest form, the problem resolves itself to this: Manufacturing and Distribution are one —parts of the same service to consumers. A manufactured article is usable only in the hands of the consumer. All of the necessary stages through which it must pass to reach the consumer are components of the service. All must be performed, all must be remunerated at a profit; the ultimate price must comprehend them all. Raw materials are transmuted into new forms by manufacturing only to increase their usefulness. Manufacturing invests in raw materials and labor only to liquidate the investment, enhanced. The quicker it is liquidated, the larger the profits. Time is the critical element throughout. The speed with which materials are transmuted, the speed with which they reach consumers, is the measure of profit.

The more direct the line, the fewer handlings, the more continuous service, the fewer transactions to be recorded, accounted and remunerated, the more the movement is accelerated, the sooner liquidation is effected.

National Distribution Conference

Quite as much in the interest of industry as in that of distributors per se, a National Distribution Conference was called, the first session of which took place in January 1925, and was concluded last December. It resulted in six committee reports which discussed collections of business figures in aid of distribution; the relations between groups engaged in manufacturing and marketing the same kinds of products; advertising and market analyses; the costs of distribution; and general conditions affecting distribution, which last might perhaps better be expressed as the public relations of distributors.

While all of these reports will interest you and have a considerable bearing upon your affairs, I need discuss now only the first which deals with the neces-

(Continued on page 84)

Purchasing for Profits

By G. L. Marsters

Norwich Pharmacal Company

There is no gainsaying the fact that purchasing for a large corporation is one of the important links in the chain. Intelligently directed, it can be—and generally is—the source of added profits. But in incompetent hands, it may easily create reductions in gross profits which are alarming, and which, in some cases, may jeopardize the successful continuance of the business.

TIME was, I suspect, when the widely quoted phrase "Well bought is half sold" did not convey, to the average mind, the broad significance that it does nowadays. In the not-so-far distant past, in the drug industry at any rate, "well bought" sometimes implied simply the purchase of a commodity at what appeared to be a favorable price level—one which would permit the ultimate sale or conversion of the material at a profit and without thoughtful consideration of some other factors involved.

In recent years, our national prosperity and the great expansion in the volume of business transacted, has fostered the development of what we, in the language of the day, call "big business"—corporations, heavily capitalized, maintaining one or more manufacturing plants at strategic centers and giving employment to hundreds of thousands of people in production and distributing operations.

Since one of the principal reasons for the existence of a corporation is to make profits for its stock-holders, the management must have at its disposal accurate information on all phases of the corporate activities. Modern accounting practice has kept pace with the growth of "big business" and the executive heads of our large organizations have at their disposal promptly, and in concise form, details of all operations of the business, including finance, purchasing, production, sales and distribution. It follows that merchandise or raw materials, to be *well bought*, must not only be purchased at a right price level, but in correct quality and with deliveries so spread as to have the goods available when wanted for production, but not so far in advance that the carrying charges absorb the economy apparently effected in the purchase price.

In this article, it is my purpose to point out the relationship of raw material purchases to profits of a manufacturing business. I recognize that in a purely mercantile business, dealing in the same class of raw materials, the speculative element is more important than in a manufacturing business. In fact I believe the normal trading margin on many commodities is so small that some institutions depend largely on astute buying and the holding of merchandise for a rise to produce their profits.

The pharmaceutical manufacturing industry, as a whole, was hard hit during the post-war collapse of 1920 and 1921 and many concerns, to quote one of my friends, "survived only because the drug business is gifted with nine lives." Generally speaking, the industry was carrying excessive stocks of finished products and raw materials, as the culmination of an effort to manufacture and carry too many items, a large percentage of which, on close analysis, were found to have limited sales potentialities and were incapable of producing profits. In other words, this industry was laboring under the listing of too many items, and depending upon a limited number of products to produce profits. Those pharmaceuticals which are important from a remedial standpoint, but which are of limited commercial importance, could readily be produced by a small number of manufacturers for the requirements of the entire country. Under existing conditions, there was too much duplication of effort.

To the far-sighted executive, the remedy was clear—eliminate the "dead wood," speed the turnover, concentrate on fewer products and, so far as practicable, confine production and sales energies to lines in

which a real volume of business already exists or is possible of development.

Advertising, selling, and distributing costs are, to most manufacturers in the pharmaceutical and allied lines, a heavy burden and one which, under prevailing methods and keen competition, are difficult of reduction. The cost of merchandise, being possible of closer analysis and control, has come in for much consideration. Thorough control of purchasing operations, the reduction of lines, the lowering of labor costs through volume production and modern automatic machinery have combined to bring pharmaceutical costs down to minimum. I believe that in most of the large laboratories of the country production is to-day handled in a most economical manner and at about the lowest reasonable level of cost.

Raw Materials Cost 60 Per Cent.

Of these costs in the average business, which is a combination of standard competitive pharmaceuticals and the manufacturer's own specialties, I have reason to believe that about sixty per cent. is for raw material. With sixty per cent. of the cost of merchandise represented by raw materials, it certainly is of prime importance that supplies be procured at favorable average costs and, in the main, when and as wanted. Excessive stocks of raw materials are undesirable as they create burdensome carrying charges through interest on investment, labor of handling, insurance, leakage or shrinkage, deterioration and other factors. Unreasonably low stocks of raw materials hamper production and a rigid hand to mouth rule of buying does not permit the manufacturer to take advantage of favorable purchasing opportunities.

Control of Stocks

The house with which I am associated exercises intelligent control over all stocks, both raw and finished. In addition to the main reservoir of pharmaceuticals at the laboratories, substantial warehouse stocks are maintained at five branches, all of these being regulated from headquarters. The stock records are handled by a competent staff by means of Hollerith tabulating equipment and Burroughs posting machines. The records are posted daily and constantly indicate the stocks available at all points. The stock records show the minimum and maximum stocks to be carried and are reviewed frequently to keep pace with altered rates of sale and the time necessary for replacement. Finished stocks are backed up by reasonable stocks of raw materials, carefully controlled by card records.

Production operations are well scheduled. On important items, they are worked out several months in advance, thus admitting of the purchase of raw materials in quantities under favorable conditions and permitting the purchasing department to arrange for a regular schedule of deliveries.

Purchasing activities are confined to reputable sellers, who have established a satisfactory record of performance in quality and delivery. Price is not the determining factor, unless the other elements are favorable.

Purchasing Records

Our purchasing department carries, in a Kardex file, a record of manufacturers, importers, and sellers, of all items which we use from whom we are willing to consider the purchase of supplies. This record is corrected frequently and, when purchasing items on competitive bids, each seller listed is given an opportunity to quote.

All raw materials and supplies are purchased to definite quality specifications as laid down by our control laboratory. These specifications are clearly outlined on each purchase order. All materials, upon arrival at our laboratories, are inspected in bulk by a competent member of our staff. The weight, volume, or count is verified and a representative sample is drawn and submitted to our control laboratory for physical examination, chemical assay or physiologic test. No merchandise is accepted for production purposes until our laboratory examination is completed and the shipment approved.

Market Conditions Watched

Market conditions on all essential materials are carefully watched and, where indicated, advantage is taken by the favorable purchase of supplies either for spot or contract deliveries. Information from reliable sources is always welcomed by our purchasing department and is given close consideration.

The importance of salesmen in the selling and distributing of merchandise is fully recognized and all salesmen, who call at our purchasing offices, are accorded an immediate and courteous hearing.

Departmental superintendents, foremen, and laboratory workers, alike, are alert to the importance of correct and uniform raw materials and irregularities are promptly directed to the attention of our purchasing department that sellers may be cautioned and sources of supply changed when necessary. Conversely, raw materials and supplies of outstanding quality are reported to our purchasing department that the facts may be known and recognition thereof taken in subsequent purchases.

We keep ever in mind that while purchasing operations are extremely important, they are not sufficient in themselves, but must harmonize with our other activities—finance, production, sales and distribution.

From 1835 with

Mrs. Winslow's Syrup

By Fred G. Krekell

Secretary and Treasurer, Anglo American Drug Company

The package containing the bottle of Mrs. Winslow's Syrup. This is the same design as adopted by Jeremiah Curtis in 1852.

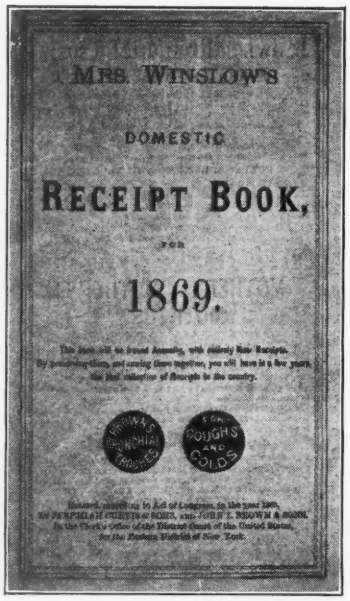
DURING Andrew Jackson's second administration, in the days when William Lloyd Garrison was being mobbed in Boston for his anti-slavery speeches and Abraham Lincoln was a struggling young lawyer, the babies of Freedom, Maine, were ushered into this world with the kindly assistance of Mrs. Charlotte N. Winslow, who, in the absence of professional aid, officiated on almost all such interesting occasions. Her fame as a skillful nurse soon became widespread throughout that portion of Maine so that she became the oracle consulted by mothers of the neighborhood upon all matters concerning the baby's health. The teething period, especially, was a trying one, and in 1835, out of the very considerable knowledge and experience she had gained, she mixed a preparation which soon gained wide favor for its soothing effect upon babies who were teething. Encouraged by the success which had attended her efforts, she continued to prepare and dispense this preparation to the mothers of the vicinity who came to her for advice.

Meanwhile, her son-in-law Jeremiah Curtis, was senior partner in the firm of Curtis and Perkins, which did a thriving retail drug business in Bangor, Maine. He had seen his wife give her mother's preparation to their children and so had first-hand information as to its results. He had taken cognizance of the increasingly larger amounts prepared and dispensed by his mother-in-law from year to year as the demand for her preparation increased. Impressed by the possibilities of distributing the preparation on a larger scale, he conceived the idea of obtaining the formula from his mother-in-law and with the Bangor drug store as a center, attempting its distribution throughout the State of Maine. Mrs. Winslow approved of the idea as she felt that she could no longer cope with the demand and early in 1845, she turned over the formula, with all appertaining rights, to the firm of Curtis & Perkins. She gave her consent also to its manufacture and sale under the name of "Mrs. Winslow's Soothing Syrup," for Jeremiah Curtis was shrewd enough to see the value of trading upon her name and the locally established reputation of her preparation.

Immediately upon securing rights to the preparation, Curtis & Perkins began an advertising campaign which was to prove the foundation for the successful merchandising of their product. Their medium was, and is to the present day, the newspaper of the small town and rural district. They constantly increased the scope of their advertising so that by 1866 they had spent $800,000 for this purpose, which, judged by the standards of those days, was a large amount for such a purpose. About that time also, they began

The former factory in Brooklyn established when the business moved from Bangor, Maine, to Brooklyn in 1855. The factory was abandoned in 1918 when the company decided to have the product manufactured by another company and devote all its efforts to distribution and sales, a policy still pursued to-day.

a system of direct-by-mail advertising which is also in vogue to-day. Recipe books and books outlining diet and health rules for the care of babies, were sent to mothers everywhere and each book carried the message of "Mrs. Winslow's Soothing Syrup." Curtis was one of the first to recognize the value of testimonials and the first "Receipt Book" issued in 1869 carried a great number, including one from Henry Ward Beecher. The advertising campaign, which began in a few Maine newspapers, gradually was extended until it embraced all of the United States, the West Indies, Europe, South America, Australia, Africa, China and Japan. To-day advertisements of the preparation appear in about 4,000 different mediums.



The "Receipt Book" mailed to mothers in 1869 carrying among other things a testimonial from Reverend Henry Ward Beecher.

But to return to Bangor and the middle of the nineteenth century. The sales of his mother-in-law's preparation were exceeding Jeremiah Curtis' fondest dreams. The fame of "Mrs. Winslow's Soothing Syrup" spread rapidly down along the Atlantic Coast and, travelling in the footsteps of the pioneers, was moving toward the setting sun. Not to be outdone by his product, Curtis was laying careful plans for a little expansion on his own hook. He studied his label and his package and in 1852 decided upon its final form which he had copyrighted. That bottle and label has been retained down through the years and is the one used to-day. bearing mute evidence to the careful foresight of the originator.

In the following year, came the most momentous decision of all. The business was to move from Bangor to New York. The gigantic nature of this step can scarcely be adequately judged to-day. Some idea of the conflict which must have taken place in the hearts and minds of all those connected with the project may be gathered from the fact that Benjamin Perkins, the partner, after considerable inner struggle decided that he would not go to New York. Two years later, in 1855, he decided to retire from the business and sold all his rights to his partner. He was a good business man but he lacked that vision which characterizes the pioneer. This removal, destroying all they had built up in Bangor, seemed an unnecessary folly to his conservative judgment and, to him, it seemed that they were inviting their own destruction. But Curtis, encouraged by the growth of their business, impatient with the small retail way of promoting it, advocated taking it up on a wholesale basis, establishing a factory in Brooklyn and an office in New York. All of which was done. When Perkins, dismayed by the radical moves which were going on all about him, decided to sell out, Curtis bought his share, and reorganized the business, taking in his sons, Jeremiah W. and George N. Curtis, and changing the firm's name to Jeremiah Curtis & Sons.

The first days in New York were long, anxious ones. A huge burden had been placed upon this preparation, originated by a humble country nurse. Would it survive or were the plans made by Curtis conceived on too large a scale for a simple homemade remedy for the ills of babyhood ? Curtis' answer was to increase his advertising in outlying newspapers, place his preparation on a consignment basis in the hands of stock agents—the present day jobbers—throughout the country and organize a corps of thirteen salesmen.

Jeremiah Curtis was extremely proud of this sales force. Each man was equipped with a wagon drawn by two well-groomed black horses. On the sides of each wagon was the inscription "Mother Winslow's Soothing Syrup." These men were the detail or contact men for the drug and general stores in the outlying districts, and they covered the entire country as far west as the Dakotas. "Daredevil" Dawson, whose picture is reproduced here, covered this far-western territory and a stock part of his equipment was a pair of "forty-fours" which

The book now mailed to mothers giving diet instructions for babies, and telling of the virtues of Mrs. Winslow's Syrup. The birth records are consulted for names.

he wore strapped around his waist. During local Indian wars or upon visiting the trade in the "bad lands," he added an armed cowboy to his retinue. It took him just a year to call on the trade in his territory, although most of the other twelve salesmen managed to make two or three calls a year. Each man worked from some designated point which he used as a base for supplies, thus solving the warehousing problem. This stysem of detail men continued, with modifications, including more modern methods of transportation, until a few years ago, when it was discontinued.

"Daredevil" Dawson, one of the thirteen salesmen who covered the country in 1855. Dawson covered his territory once a year. Others made more calls a year.

Business continued to improve so rapidly that by 1867 the company could afford to have a lawsuit. Another "Winslow's Soothing Syrup" had appeared on the market in a similar package and Curtis determined to fight the imitator in court. The case dragged along for the better part of two years. The other manufacturer was forced to discontinue the manufacture and sale of his article in that package and under that name, and the total cost to Jeremiah Curtis & Sons was $118.

Among the interesting facts revealed by an examination of the briefs presented during the lawsuit, was that the Brooklyn factory at that time, 1867, was employing close to one hundred persons and that Jeremiah Curtis & Sons "realize great sums of money annually from the sales of Mrs. Winslow's Soothing Syrup, amounting to over 300,000 dollars." Quite an achievement for a man who was co-partner of a small New England drug store twenty years before. The methods of manufacture were, of course, very primitive; the preparation was hand-mixed and the bottle hand-filled and hand-labeled, so that a comparatively large force was needed to maintain adequate production. For, even in those days, in addition to the United States, the preparation was being sold in Europe, the West Indies, South America, Australia, and in parts of Africa. To quote the briefs once more, "they manufacture at their factory in Brooklyn, and sell over one and a half million of bottles annually."

The story of "Mrs. Winslow's Soothing Syrup" from that time until about 1910 is one of uninterrupted progress. In the previous year, the company had been incorporated as the Anglo-American Drug Company, under which name it had traded since 1868. But from 1910 until 1912 the company suffered, along with many others, from the crusade against proprietary medicines which swept the country. It was finally decided to revise the formula, and this step, in company with widespread advertising and publicity, soon restored "Mrs. Winslow's Syrup" to that place in buyer confidence which it had previously held. The advertising consisted mainly of signed affidavits from reputable doctors and physicians testifying to the worth of the preparation and to the fact that it was absolutely harmless if used according to directions. While this campaign was directed to the consumer trade, another, aided by national drug periodicals, was being carried on to restore dealer confidence. This all combined to restore the sales of the preparation back to the old level reached before the anti-narcotic agitation was started.

The only outstanding event since that crisis, occurred in 1918 when, due to fluctuation in raw materials brought on by war conditions, the company decided to have its product manufactured by another and to confine itself to sales exclusively. Although at the time, this was considered in the light of a wartime measure, subsequent experience has shown that the company is now in better position to analyze and fix its overhead expenses and to devote more time to sales and advertising. Inasmuch as advertising still forms the backbone of the merchandising policy, the product being handled wholly through jobbers, the company devotes the major portion of its attention to this factor. As this subject has been discussed previously, little remains to be said. The newspaper of the rural district is still the best medium, as it was in 1845. From its offices, the same, by the way, which it has occupied ever since the early days in New York, the company distributes modern booklets telling how properly to care for the baby. The mailing list, which is a huge one, is secured from the birth lists as they are published. In this way, the mothers of the rural districts to-day learn the story of Charlotte Winslow and the preparation she evolved to aid her neighbor's babies through the early stages of their careers.

Narcosan Effective as Drug Cure

The use of narcosan in combating narcotic addiction, is the most effective treatment yet developed says, the New York State Department of Correction at Welfare Island. The State Commissioner had ordered all State institutions to discontinue its use, but its employment on Welfare Island has not been interrupted. Of more than 1,300 addicts treated during the last two years, only 10% have returned to the use of narcotics. Under ordinary treatments, the usual return to addiction is about 70%.

The Stabilization of Pharmaceutical Products

By Dr. William J. Husa
Professor of Pharmacy, University of Florida

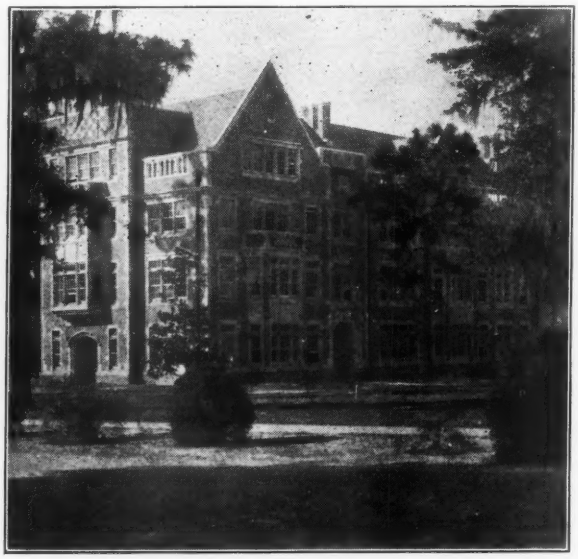
Valuable research is constantly being conducted to improve methods of preserving the efficacy of pharmaceuticals between the time they leave the manufacturer until they are consumed. In this article, Dr. Husa reviews the latest methods discovered together with the latest discoveries as to the causes of deterioration of various products.

SCIENTIFIC preservation of pharmaceutical products has long been the goal of manufacturers and research workers. Manufacturers have shown the ambition and desire to place on the market high quality products subject to the least possible deterrioration. In addition to altruistic reasons, the correct preservation of drug products is of interest to the manufacturer from a purely business standpoint. The reason for this is clear. Unstable products entail a high production cost for various reasons, such as cost of special apparatus, expensive testing and re-testing for purposes of control, etc. There is more opportunity than usual for loss of a batch of material in the manufacturing process. To this must be added the loss on goods in storage and the cost of replacing goods on which the date has expired. Furthermore, unstable products must be marketed in small quantities. The discovery of a means of increasing the keeping qualities of a product thus has a tendency to simplify the problems of manufacture and distribution.

In the case of unstable preparations which may be prepared extemporaneously, the discovery of a means of preservation makes it possible to shift the manufacture from the back room of the retail drug store to the modern plant of the manufacturer. As long as such preparations are unstable, the tendency is for the pharmacopoeia to require that they be freshly prepared when needed. This means that the preparation must be made by the retail pharmacist. But if a suitable preservative or method of preservation becomes known, it is no longer necessary that the preparation be freshly made, and history shows that in such cases large scale production will account for most of the output.

In considering the keeping qualities of any drug product there are several factors which have a bearing, including the kind of container used, the conditions of storage in regard to temperature, access of light and air, etc., and the possibility of increasing the stability by the addition of a preservative or stabilizer. The U. S. P. and N. F. indicate, wherever possible, how the various drugs and preparations should be stored, i. e. whether in bottles, jars, collapsible tubes, etc.; whether in amber or dark amber bottles; whether in resistance glass or not; whether in well filled or partly filled bottles; whether in small or large bottles; whether in glass, rubber or cork stoppered bottles; whether or not in air tight containers, etc. Since the effect of containers on the quality of contents has been fully considered in previous articles (DRUG MARKETS, Nov. 16, 1926 and Nov. 30, 1926), this aspect of the problem will not be considered at this time.

The U. S. P. and N. F. give valuable information on conditions of storage, i. e. whether in a light or dark place;



First section of the new pharmacy-chemistry building of the University of Florida.

Three stabilized products: Formaldehyde U. S. P. contains not less than 37 per cent. formaldehyde with variable amounts of ethyl or methyl alcohol, or both, to prevent polymerization. Cod Liver oil is protected from loss of vitamin content by displacing the air in the oil and above the oil in the package with carbon dioxide. This also prevents slow oxidation of the oil which results in a disagreeable taste. Hydrogen peroxide is commonly stabilized with acetanilid.

whether or not in the sunlight; whether in a refrigerator or just in a cool place; whether or not remote from fire, etc. In the present article the effect of conditions of storage will be passed by, in order that attention may be concentrated on methods of preventing or retarding deterioration in pharmaceutical products by the use of preservatives or stabilizers. Chairman Scoville of the N. F. Revision Committee has stated that too little is known along this line. He has pointed out the desirability of extensive research work on the preservation and stabilization of N. F. preparations, and undoubtedly this would apply also to U. S. P. items and other drug products. In the case of some drugs and preparations, progress has been retarded by the lack of suitable assay methods of sufficient accuracy for the detection of changes in activity. As progress is made in methods for detection of deterioration, it becomes possible for pharmaceutical research workers to devote relatively more effort to the constructive task of working out methods of preventing deterioration.

When reasons for loss in activity are sought, each drug is a problem in itself. Among the possibilities are changes caused by loss of volatile constituents, action of light or heat, absorption of moisture or carbon dioxide, etc., with resulting chemical changes such as hydrolysis, oxidation, reduction, simple or double decomposition, polymerization, etc. Sometimes changes in hydrogen ion concentration are involved; in other cases the effect of enzymes or other catalytic agents is an important factor. Furthermore, the nature of the pharmaceutical preparation must be considered; for instance, a crude drug may be fairly stable, whereas in the form of the tincture it may rapidly lose its activity.

Deterioration of drugs is sometimes caused by insects. Among the drugs that are particularly liable to the attack of insects are aconite, althea, belladonna root, calumba, cantharides, capsicum, caraway, cardamom, ergot, ginger, glycyrrhiza, jalap, linseed, myristica, pumpkin seed, rhubarb, sarsaparilla and strophanthus. Small lots of these drugs may be protected from insects by storing in tightly closed containers with the addition of a few drops of chloroform or carbon tetrachloride. Nutmegs and ginger are coated with lime for protection against insects; in some cases this practice allows a poor sample of the drug to pass as a good one. It is well to remember

that a powdered vegetable drug is more liable to deterioration than the whole drug because more surface is exposed to light and air.

Carbohydrate Pharmaceuticals

Pharmaceutical products which contain carbohydrates, proteins, etc. are subject to bacterial changes unless some protection is given. In addition to the use of alcohol, glycerin and concentrated sucrose solutions in the dual role of solvents and preservatives, it is sometimes possible to use some of the common antiseptics. Thus mucilage of acacia, U. S. P. X., is preserved by the addition of one-tenth per cent. of sodium benzoate; a former edition of the pharmacopoeia directed the use of lime water with the same object in view. In mucilage of tragacanth, glycerin acts as a preservative. Solution of pancreatin, N. F. contains one-fifth per cent. of chloroform which aids in preservation and adds to the flavor. Thymol is used as a preservative and antiseptic in solution of procaine hydrochloride, N. F. Glycerin is sometimes added to emulsions as a preservative; it has the advantage of not precipitating the emulsifying agent and its viscosity adds to the stability of the emulsion, however, it has the disadvantage that a large proportion is required. In the case of emulsions of volatile oils, preservatives are not so necessary, because volatile oils themselves are generally good antiseptics. Cresol, phenol, and other germicides find an application in the preparation of ampuls of solutions which are injured if sterilized by heat; in this case the object is to insure sterility rather than to preserve. Alcohol is used as a preservative in witch hazel water, N. F. Other waters might also be preserved with alcohol but a small amount helps rather than hinders decomposition, while a large amount is objectionable in most waters on account of its therapeutic action, although in the case of witch hazel water the therapeutic effect is desirable.

Loss of Volatile Constituents

One of the simplest forms of deterioration of drug products is that due to the loss of volatile constituents.

In many cases this trouble may be easily and effectively remedied. Thus chloroform water readily loses strength on account of the volatility of chloroform, but this is corrected by keeping an excess of chloroform in the container of chloroform water. This expedient, however, can only be applied in the case of saturated solutions of solids or immiscible liquids, and cannot be used, for example, in the case of spirit of ethyl nitrite.

The loss of volatile alkaloids from preparations is readily circumvented by converting the volatile alkaloid into a non-volatile alkaloidal salt. Acetic acid is used for this purpose in fluidextract of lobelia, N. F. The acetic acid converts the volatile alkaloid, lobeline, into a salt which is more stable and less easily volatilized. The same principle accounts for the use of hydrochloric acid in extract of conium, N. F. The acid converts coniine, the active volatile alkaloid, into a non-volatile soluble salt.

Tablets of sodium bicarbonate, N. F. gradually lose oil of peppermint on storage. Another example of loss of volatile constituents is the gradual loss of camphor in coryza and rhinitis tablets. In such cases the amount of ingredient lost is dependent on the temperature and time of keeping, and to some extent on the air space and tightness of closure of the container. The most simple and practical way to prevent such losses is to coat the tablets.

Polymerization

A notable example of deterioration caused by polymerization is found in solution of formaldehyde. A solution of pure formaldehyde gradually polymerizes to paraformaldehyde, which forms a precipitate. Ethyl and methyl alcohols prevent or retard this polymeric change in formaldehyde and for this reason the U. S. P. allows the presence of variable amounts of these alcohols in the official solution.

Chloroform, U. S. P. is more stable than chemically pure chloroform because the U. S. P. allows the use of one per cent. of alcohol, which hinders the decomposition.

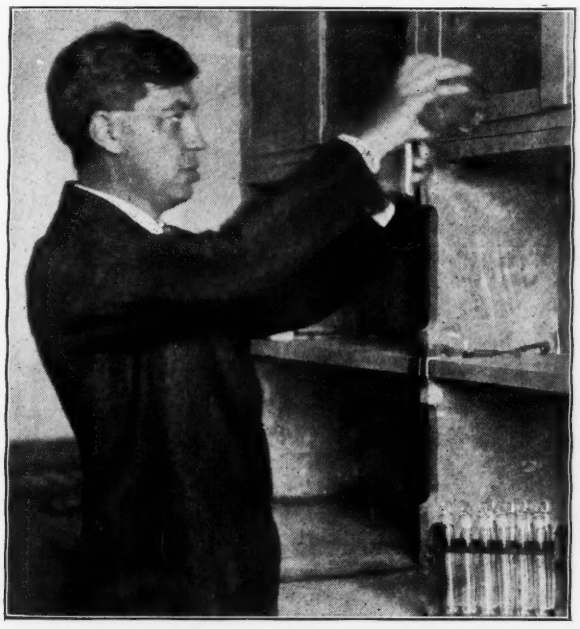
Hydrogen Ion Concentration Control

It has been found that changes in the hydrogen ion concentration of many preparations cause changes in the keeping qualities. This is largely due to the fact that a change in acidity or alkalinity may make conditions more favorable or unfavorable for other changes, such as hydrolysis or oxidation. For example, alkaline or neutral solutions of emetine hydrochloride are particularly subject to deterioration. For this reason the N. F. directs that for ampuls of emetine hydrochloride, a solution which has been made slightly acid shall be used. Likewise, acetic acid is used in solution of iron and ammonium acetate, U. S. P., to make sure that the solution is acid and thus prevent the possible precipitation of basic ferric acetate.

Salicylates when alkaline are particularly liable to oxidation, with resulting development of a brown or red color. For this reason sodium salicylate and ammonium salicylate contain traces of free acid which is allowed to remain so that the salts will be more stable. Other salts such as potassium bromide and potassium iodide when pure are prone to decompose, giving some free bromine or iodine which colors the remainder of the salt. A trace of alkali carbonate allowed to remain in the salts prevents the discoloration. However, an excess of alkali carbonate is very objectionable as it is likely to cause precipitation of alkaloids when used in a formula containing alkaloidal salts in solution.

The deterioration of aconite and its preparations has been a serious problem in past years, the loss in activity being due to the hydrolysis of aconitine into

the relatively inactive products, aconine and benzoylaconine. This deterioration takes place in the crude drug as well as in such preparations as the tincture and fluidextract. Several years ago Dunning suggested that there might be a relation between the hydrolysis of aconitine and the hydrogen ion concentration of the preparations in which it occurred. This suggestion has been verified and extremely valuable results have followed from the brilliant work of Swanson and co-workers along this line. In 1923 Swanson and Walters reported experiments which showed conclusively that the deterioration of tincture and fluidextract of aconite can be prevented



Dr. William J. Husa, the author, in his laboratory at the University of Florida.

by the addition of two per cent. of acetic acid or 0.1 per cent. of hydrochloric acid. A tincture made with a menstruum containing 70 per cent. of alcohol and two per cent. of acetic acid showed no loss in activity in two years, while ordinary tincture of aconite showed a great deterioration in the same period of time. In 1927 Swanson and Hargreaves reported that the hydrogen ion concentration controls the deterioration and stabilization of aconite preparations. They have recommended that tinctures and fluidextracts of aconite should have a p_H value of between 2.5 and 3 in order to prevent deterioration. These remarkable results indicate the progress which may be expected in pharmacy by the application of the principles and methods of modern chemistry.

The manufacturer of local anesthetics needs to know the most desirable form in which solutions of the anesthetics may be put up, so as to retain the maximum efficiency and produce the minimum irritation and toxicity. Special studies along this line were made by a committee of the A. D. M. A., with results as follows. Procaine solutions, prepared with distilled water without the addition of other salts or preservatives, and having p_H values above 5, approach an equilibrium p_H of slightly less than 5; a solution adjusted at a p_H value of 4 remains stationary or increases by a few tenths of a p_H unit. From these results, it appears that the stable p_H value of procaine solutions is about 4.5. Cocaine solutions, prepared as above, and having original p_H values of 4 to 7, nearly all reach a p_H value of about 3.8 within three months and up to fourteen months they change slowly, at the end of that time reaching the value of 3.6, which is probably close to the equilibrium point. Procaine solutions having p_H values of 4 to 7 show almost identical toxicities, and the same is true for cocaine. Moreover, the toxicities of neither the procaine nor cocaine solutions change markedly within the test period of over a year. Procaine solutions retain practically their full efficiencies in a like period, but cocaine solutions show noticeable falling off in efficiency. Other preparations are being studied similarly by various research workers, the purpose being to find the hydrogen ion concentration at which the preparation is the most stable.

Absorption of Oxygen

The absorption of oxygen from the air is a frequent cause of deterioration in pharmaceuticals. The oxidation which is liable to take place in syrup of ferrous iodide, U. S. P. is largely obviated by the use of sucrose and hypophosphorous acid. Sucrose is used similarly during the preparation of mass of ferrous carbonate, U. S. P. The British Pharmacopeia directs the use of glucose in syrup of ferrous iodide, B. P. Since sucrose has no marked reducing action, it has been suggested that the protective action is due to the glucose and levulose formed by hydrolysis of the sucrose. Accordingly it has been suggested that it might be an advantage to use invert sugar in the first place, so as to have the benefit of the reducing action right from the start. Hypophosphorous acid is also used in diluted hydriodic acid, U. S. P., to prevent, as far as possible, the liberation of iodine.

Preparations containing phosphorus require some protection against oxidation. Oxidation is prevented in pills of phosphorus, U. S. P. by coating the pills with balsam of tolu. In phosphorated oil, N. F., ether is used to prevent oxidation and give a more palatable taste.

Certain flavoring oils, such as oils of lemon, orange and bergamot, change very quickly on exposure to air and acquire a terebinthinate odor and taste. Alcohol hinders this change and accordingly it has been proposed that the retailer add five per cent. of alcohol to these oils at the time the container is opened for the first time. Some manufacturers preserve these oils by diluting them with an equal volume of alcohol; this is not a disadvantage when the oils are to be used later in the preparation of elixirs. So-called terpene-less oils of orange, lemon, etc. do not become terebinthinate but the general experience

seems to be that they do not give as fine a flavor as good fresh oils.

The use of "antioxidants" or negative catalysts of oxidation is receiving a great deal of attention at the present time. Moureu and Dufraisse state that by this means they have been able to preserve unsaturated hydrocarbons, aldehydes, delicate perfumes caoutchouc, fats and oils, etc. In a British patent (no. 181, 365) granted to these investigators, the claim is made that the addition of hydroquinone to vegetable oils, such as linseed oil, prevents their turning rancid. The patent also covers the inhibition of oxidation by the air of chemicals, oils, essences, resins, animal tissues, latexes and rubber. The patent does not limit itself to hydroquinone, but covers other anti-oxidants.

Experiments carried out in the pharmacy laboratory of the University of Florida by William J. Husa and Lydia M. Husa have shown that hydroquinone reduces the rate of development of rancidity in oil of sweet almonds. This result indicates that there is at least some basis for the patent claims of Moureu and Dufraisse. Further experiments were carried out to determine the effect of hydroquinone on the keeping qualities of lard. The results with the Kreis test indicated that lard alone after one week had reached the stage of rancidity which was reached by lard containing hydroquinone after two weeks. Evidently the addition of 0.5 per cent. hydroquinone to lard reduces the rate of development of rancidity about 50 per cent. Further work will be done to determine whether this property of hydroquinone can be applied to the preservation of ointments in a practical way.

According to Askinson ("Perfumes and Cosmetics" page 277-8), salicylic acid materially counteracts the tendency of fats to become rancid. Lewkowitsch also classifies salicylic acid as a preservative of fats. These statements were not substantiated by Husa and Husa, who found that salicylic acid has no effect on the rate of development of rancidity in oil of sweet almonds. Other compounds which proved to have no effect on the rate of development of rancidity are as follows: acetylsalicylic acid, betanaphthol, liquefied phenol, dl-alanine, pyrogallic acid and resorcinol.

Stabilization of Aldehydes

The aldehydes are a class of compounds which find some application in pharmacy. The fact that aldehydes as a rule are easily oxidized accounts for much of the trouble caused by deterioration of formaldehyde, benzaldehyde and cinnamic aldehydes, which are among the important aldehydes of pharmaceutical interest. Formaldehyde, in addition to the polymeric change previously discussed, is slowly oxidized to formic acid.

Benzaldehyde in contact with air is slowly oxidized to benzoic acid, as is evidenced by the crystals of the latter which are often seen in old specimens. In fact, oil of bitter almonds, in which benzaldehyde is a chief constituent, has been known to solidify because of this exoidative change. The deterioration of bitter almond water, with resultant development of acidity, is caused by this same oxidation of benzaldehyde to benzoic acid. These facts lead to the question of what can be done to prevent this change. According to statements in the literature, hydroquinone in the proportion of one part to 100,000 parts is said to retard or practically prevent the oxidation of benzaldehyde by air at moderate temperatures. It has also been reported that the hydroiodide of methyl amine acts as an antioxidant toward benzaldehyde. The problem, from a pharmaceutical standpoint, is to find an antioxidant or stabilizer for benzaldehyde which would be free from objections as a constituent of drug products.

Cinnamic aldehyde likewise is slowly oxidized to the corresponding acid. The deterioration of cinnamon water is a case in point.

The deterioration of ether is due primarily to oxidation, with the formation of peroxides, which are said to be the cause of undesirable after effects when the ether is used as an anesthetic. It is reported that one-hundredth per cent. of pyrogallol has a powerful deterrent effect on the decomposition.

Protecting Cod Liver Oil

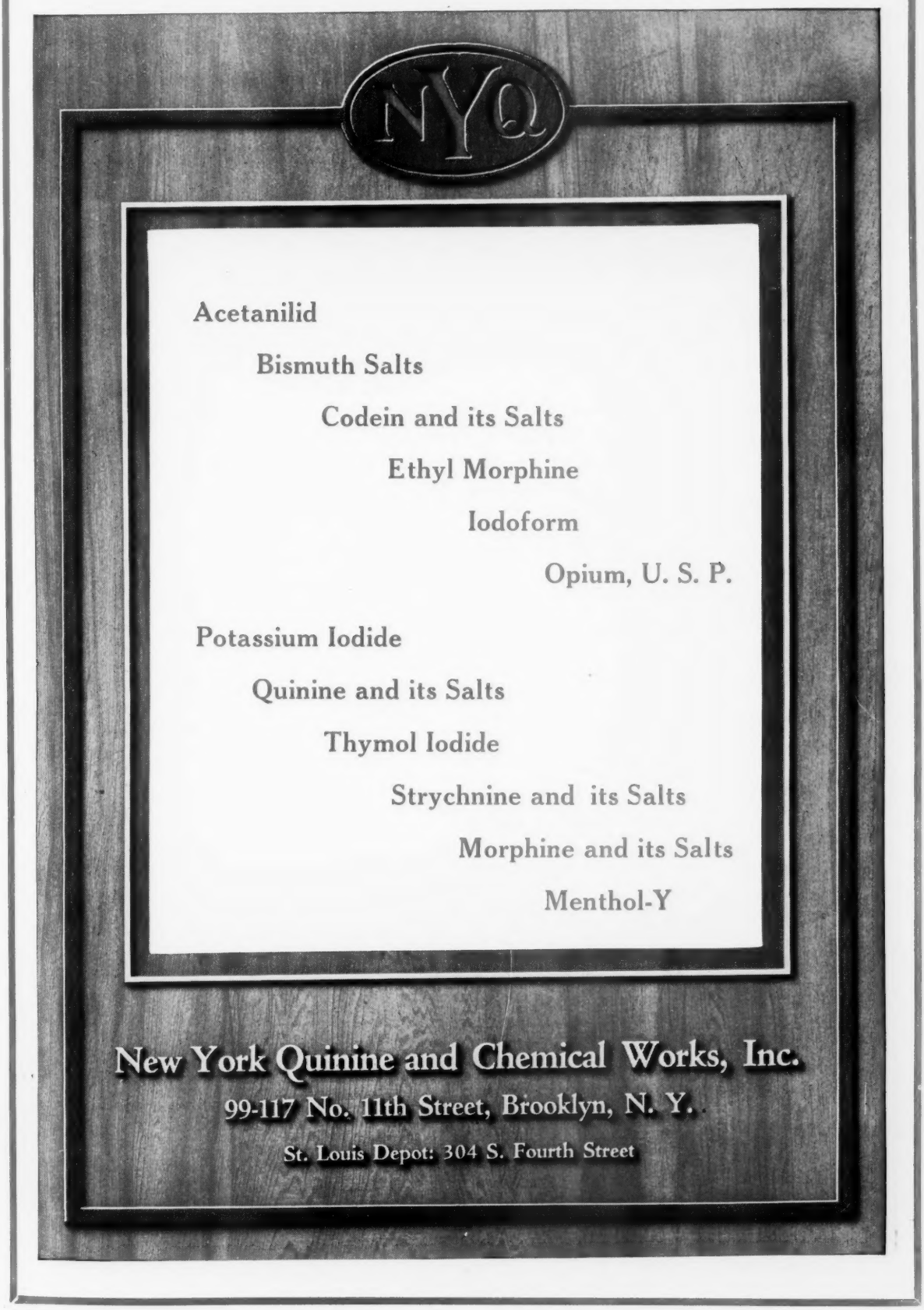
One method of preventing oxidation is to displace the air in the container by an inert gas, such as nitrogen or carbon dioxide. This method is used to preserve the vitamins in cod liver oil. Some manufacturers pass carbon dioxide into emulsion of cod liver oil before bottling; this has the dual effect of preserving the vitamins and of preventing slow oxidation of the oil with resulting development of a disagreeable taste. The use of carbon dioxide in containers of ether for anesthesia has been proposed. In applying this method it must be remembered that in some cases carbon dioxide in itself is a cause of deterioration. For example, solution of sulphurated lime, N. F. must be kept in a tightly stoppered bottle as carbon dioxide from the air would cause precipitation of calcium carbonate and sulphur.

Alkaline substances find application as preservatives in certain cases on account of their property of holding resinous and pectinous matter in solution. Thus solution of potassium hydroxide is used in compound cathartic elixir, N. F. to keep the resins from the fluidextracts in solution. It is used similarly in aromatic syrup of yerba santa, N. F. Ammonia water is used in fluidextract of senega, N. F. because it combines with pectinous matter to form a soluble compound and thus prevents gelatinization.

Aqueous solutions of physostigmine salicylate decompose on standing and acquire a red tint. It has been shown that this change is retarded when saturated boric acid solution or carbonated water is used as a solvent.

Experiments have been made with tinctures of digitalis adjusted to various hydrogen ion concentra-

(Continued on page 86)


NYQ
Acetanilid
Bismuth Salts
Codein and its Salts
Ethyl Morphine
Iodoform
Opium, U. S. P.
Potassium Iodide
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Seaweed and nitrates, supplying sources of

IODINE

and the factors that affect its extraction

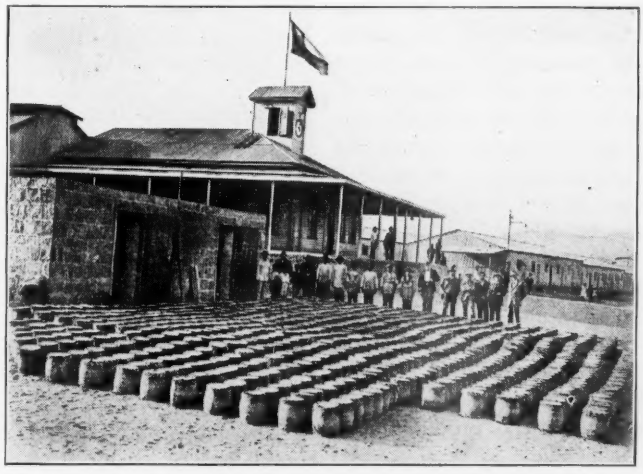
The price of Iodine did not vary from pre-war figures either during the war or the period following the war. Chile maintains a monopoly that has never as yet been successfully attacked.

WHILE our ancestors revolted against British dominance of the seas during the memorable war of 1812, pharmacy and therapy were supplied with a discovery, perhaps more revolutionary than any other event in the history of medicine. Iodine, the constituent of the most well known and most widely employed of all antiseptics, was discovered in France. There has been considerable dispute as to who really made the initial discovery but the earliest reference to iodine as it is known under its present nomenclature, is recorded two years after its inception. At that time, Sir Humphrey Davy, christened the newly found substance, iodine, which is derived from the Greek *iodes*, meaning *violet* and so applied because of the hue of the crystalline form.

Sea weed, abundant along the coasts of England, Scotland, Normandy and Norway, furnished the original iodine source and its extraction continued on an experimental scale until 1841 when its usage attracted universal interest and commercial production became a profitable venture. Demand grew increasingly and the price advanced correspondingly until 1862 when recovery of iodine from the mother liquors obtained in the manufacture of sodium nitrate from caliche, commenced in Chile. Thereafter Chile assumed a controlling stand in the world market a position which the old world has never been able to regain and which Chile will doubtlessly maintain for many years to come.

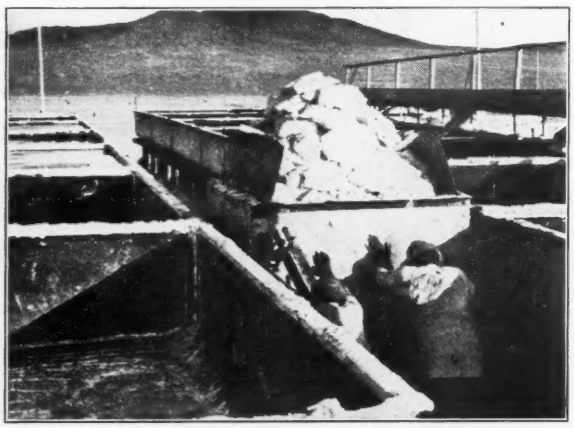
The early methods of manufacturing iodine, as practiced in Europe, have been but slightly improved upon; in fact only minor changes in equipment have replaced the primative methods in vogue in the days of Napoleon. Yet despite, the abundance of the raw material, seaweed, this process is so costly that European production makes but a minute impression on the world market.

The iodine bearing weed is a marine growth clinging to rocks or washed ashore, and is preferred when partially submerged in shallow water as it is then found to have a richer iodine content. Hand labor is employed, with scythes and sickles, in reaping the kelp, which is subsequently spread out to dry on adjacent beaches. The operation is similar to haymaking, requiring about forty-eight hours to dry. The weed is burned, and in order to obtain complete combustion, kilns are constructed about 2½ feet high, 3 feet wide, varying in length from 6 to 20 feet. When the weed is completely burned, the ashes are fused and form cakes on the flooring of the kiln. With the constant addition of kelp a flooring of fused ashes is formed, sometimes as large as 24 inches in thickness and extending the length of the kiln. While this mass re-



View at Oficina Paposo of parcel of iodine to be stored in the strong room at the left, where, because of its value, it is kept until time of shipment.

mains in the heated stage, water is poured upon it, causing it to disintegrate into small lumps. These lumps are lixiviated in vats and the resulting solution drafted in boiling pans, ebullated, after which the remaining salt is extracted in the form of potassium sulfate and potassium chloride. The mother liquor is treated in a like manner three or four times and all possible potash removed. The remainder is charged with a solution of sulfuric acid and allowed to settle, whence the sulfurous compounds are decomposed and



Nitrate of soda plant showing the nitrate after it has become crystallized in the drying tanks. The mother liquor from this crystallization contains the by-product idoine.

precipitate. The liquid is finally treated with manganese dioxide, forming sodium acid sulfate and free iodine. The latter volatilizes and is condensed in earthenware pipes.

In Chile, iodine is produced as a by-product of the manufacture of nitrate of soda. In procuring nitrates from the caliche and costra, the raw products, the nitrogen bearing salts are leached out with water, hot or cold, depending upon the solubility of the earthy matter. In the leaching process, all insoluble or undesirable particles are separated for waste disposal. The aequous solution used is called the mother liquor, which upon cooling, deposits the nitrates in vats, the liquor being again used for leaching another batch of material. While the liquor is in transit, iodic substances gradually accumulate. This is a perpetual process, proceeding to and from the raw material deposits and the leaching plant, and may be carried on indefinitely—or until a sufficient amount of iodates are collected. Thus it must be understood that iodine may either be discarded with the remaining insoluble or undesired salts, or may be produced as desired. In other words, with the production of sodium nitrate on a scale as huge as it is to-day, Chile could manufacture a sufficient quantity of iodine, that if dissolved into tincture of iodine or into a belaching agent—another large use—could possibly garb the Andes in its characteristic brownish tint. The remainder of the process, while a more modern and efficient operation than the European method, is basically similar. The mother liquor is mixed with a bisulfite solution and delicately neutralized with sodium carbonate. These liquids are stirred, thoroughly mixed, and the liberated iodine is removed with water and ultimately dehydrated. The entire substance is then disintegrated and heated in retorts for several days. The free iodine is devaporized and solidifies in crystal form, adhering to the inner walls of the retort. After cooling, the iodine is removed and packed in stout wooden kegs. The kegs are covered with green cowhides, which when dry, grip the kegs very tightly, preventing disaster in the event of mishandling in transit and guarding against permeation and volatilization of the contents.

In addition to the countries previously mentioned, iodine may be produced in Japan, Java, Russia, and in this country. Of these, Japan leads in volume production. The Japanese supply is of sufficient quantity to meet domestic requirements and to conduct a mediocre export business. The major portion of the supply is derived from seaweed, gathered by individuals who are granted the exclusive harvesting rights. These harvesters sell the ashes to manufacturing concerns in the Hokkaido vicinity, who in turn produce the finished product in a manner similar to the ordinary methods in vogue in Europe. Another

Interior of iodine house showing the retorts in which the iodine is produced in the background, and the filling and closing of kegs in the foreground.

source of iodine in Japan arises in the nature of a by-product from the manufacture of Aji-no-moto, a native table sauce, but the yield is negligible in quantity.

The fact that Japan is independent of Chilean dominance is easily signified by the estimate production costs. In Japan, the gross production costs, less the revenue obtained from the sale of chlorides and other by-products, are equivalent to $2.75 per

(Continued on page 88)

How E. L. Patch Company Handles Returned Goods

By James A. Patch

One of the best sources of information to determine how your goods are standing up in service is offered in returned goods. If the policy of throwing away all returned goods and crediting the buyer is followed, the manufacturer not only adds materially to the cost of production, but also fails to utilize readily available methods to educate himself as to the efficacy of his product and package, and to educate his wholesalers and retailers in the proper methods of handling his products.

IN the request for an article on returned goods it was suggested that the story might be confined to the experiences of a single organization. The writer therefore is taking the liberty of discussing the question of returned goods as it relates to his own firm.

Until within a few years, the men in the plant in question, who had to deal with returned orders looked upon this phase of the business as a necessary nuisance and were more bothered by handling the goods and getting them out of their way than they were concerned in finding some method to cut down the loss involved.

The time came, however, when in the general search for items which might be contributing to high costs, the question of the cost of handling returned orders came up for scrutiny.

An event which gave impetus to the move to reduce the number of returned goods was a visit made by members of the executive force to study the activities behind the scenes in a great department store. Among other sections visited was the returned goods department where merchandise to the value of hundreds of thousands of dollars came back each year. The cost of handling all these goods was impressive. In this department were represented cost of space, transportation charges, secretarial and administrative expenses, repair costs, which it was hard to believe were wholly necessary. The lesson came home especially to those of the visitors who appreciated that some at least of this expense had been borne by them in the price they had paid for commodities bought in this very store. The bigness of the returned goods problem at this great establishment only emphasized the fact that every supplier of merchandise has the same item of loss to contend with.

The study of the problem of returned goods in the laboratory with which the writer is connected, began with the issuance of a returned order form for each lot of goods coming back from a customer. (See illustration). This slip, made in duplicate, was started by the receiving clerk who recorded on it any identifying data found on the package. He noted also the condition of the goods as received, the number and kind of articles, and whether broken or whole. This procedure is still being followed.

The duplicate copy of the returned order slip is attached to the goods which have come back. The original is sent to the sales department which handles all returned goods correspondence. No credit is allowed on such goods before word is received from the customer, either directly or through the salesman who calls on him. The nature of the correspondence often makes it possible for the Credit Secretary to dispose of the order without further advice from other departments. If a mistake has been made in the goods sent, as to quantity or kind, the customer's account is credited, and the Credit Secretary enters on the returned order form the cause for which the goods came back and the disposal to be made of them. Such goods usually pass through the finishing department for inspection and repair and are then sent back to the stock.

Should the sales department need further information when the quality of the goods is in question, the returned order slip is sent to other departments. First, a representative of the Control Department examines the returned goods and adds his conclusions to the slip. If a defect is found he consults with the foreman of the department responsible for the defect. Spoiling of a preparation, wrong color or consistency, imperfect packaging are all matters for the control department to investigate. If the deterioration is evidently due to the customer's handling of the goods.

this fact is referred back to the sales department.

Where some particular cause for goods coming back is being studied, as for example, poor corkage, all return order slips bearing on this subject may be referred to the Production Manager's office. Suggestions offered by any department as to how to prevent recurrence of a defect are also added at the foot of the slip.

Ordinarily the consignee enters a claim with the transportation company for goods broken in transit. Sometimes, however, where it is evident there is a breakage, the goods are returned without having been opened, and the credit department is obliged to file a claim with the transportation company. If a bottle of liquid is broken in a shipping case, other packages in the same case are likely to be soiled. These soiled goods are usually returned by the customer and credit is allowed for what can be salvaged. In such a case the credit department refers the returned order to the finishing department for report on the amount of repair work necessary. The returned order slip in any case should carry a history of the transaction.

A package returned after being out of the manufacturer's hands for 27 years. Needless to say no credit was allowed.

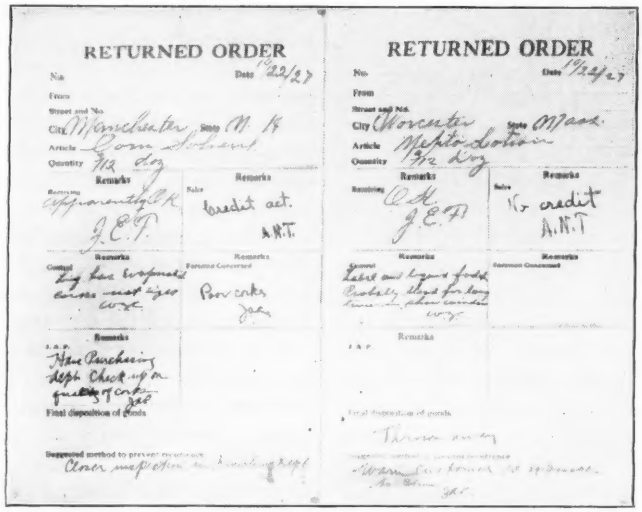
Once the returned order sheet has made the rounds, it is sent again to the credit secretary in the sales department who has the last word as to what consideration should be given the customer. Then the sheet is returned to the receiving clerk who matches it with its duplicate, and carries out any instructions in regard to the disposal of the goods. The returned order sheets are finally filed in the production office for tabulation.

It may seem at first thought that this procedure is more than is called for in disposing of returned goods. A consideration of what resulted from the use of the returned order sheets may show that the method is well worth while—at least in the plant concerned.

The company no longer needs to depend upon general impressions, so often misleading, as to what goods are coming back. Records in black and white dating back for years now tell the story of each article returned.

To illustrate how general impressions sometimes function, two letters—one following within a day of the other both complained about the same preparation. It so happened that two years before there had been trouble with precipitation in this particular preparation, but this defect had been quickly overcome. The two letters recalled the old trouble but the lapse of time had been forgotten, and the impression in the office was that the defect had not been corrected and that business was therefore being lost. Reference to returned order records, however, showed that these were the first complaints against the preparation for more than a year and when the goods were returned and the identification numbers were consulted it was found that both lots had been shipped previous to the correction of the difficulty. The returned order records further revealed that not one complaint had come in against the goods produced since the change in formula had been made.

A study of a tabulation of these records suggested ways for reducing the returned goods evil. The causes for goods coming back were classified under two headings—in one list were included all the causes over which the company had control. There were included in this group, for example, such



Two typical return order blanks. The one on the left is for Corn Solvent which evaporated due to leaky corks. A credit was allowed and the purchasing is asked to check the quality of the corks received, while closer inspection is recommended to the finishing department. The one on the right is a complaint of fading of the package due to exposure to sunlight. No credit was allowed and the customer was warned about such exposure of products.

reasons as these: Preparation spoiled, off color, consistency wrong, specks in the product, leaky container, package soiled, wrong corkage, poorly wrapped, wrong number or kind shipped, incorrectly addressed. In the second class were listed those causes over which the company had little or no control, as for example: Customer gone out of business, no sale, goods broken in shipment, deteriorated by age or by undue exposure to light or wrong temperature.

From a study of this analysis it appeared that the cases where goods had come back as a result of the company's shortcomings outnumbered those in the second class. A realization of this fact led to concerted efforts to change the situation.

It is generally recognized that in any manufacturing or merchandising organization, even when its administration may have the best of intentions and plans for guarding against mistakes, goods get by which are not perfect. Requirements of inspection and checking, be they ever so rigid, depend upon human agencies for fulfillment, and any campaign to reduce the causes for returned goods must have for one of its objects the toning up of all the workers so that every hand and eye will do its part better.

A Repeat Order is a Commendation

A Returned Order a Condemnation

This sign is posted at various points throughout the plant in order to impress upon the workers the importance of preventing returned goods.

Such a campaign was instituted by the company. Those directly concerned with every failure in perfect production were shown wherein they had erred. Those proven incapable of judging properly the quality of a product were shifted to other work. Repeated failure to do things right resulted in some cases in the discharge of the worker.

The control department discovered ways to improve the keeping qualities of preparations which had a tendency to spoil. The shipping department found new and better ways of packing goods. Trial shipments of various styles of shipping packages were sent to different parts of the country and back to check on the durability of these packages.

In addition to the stress on details, a general campaign was started to impress everyone with the importance of turning out perfect goods. Copies of the slogan, "A Repeat Order is a Commendation, a Returned Order a Condemnation," were posted in all parts of the plant and a prize was given for the best composition on the import of the slogan. The subject of returned goods was frequently discussed in the foreman's meetings.

The effects of focusing attention on the returned goods problem soon became evident in a nearly complete elimination of some of the former causes for goods coming back, and in a large reduction in the percentage of all kinds of returned products.

As to the causes beyond the company's control some of these will probably never be eliminated as long as human nature remains the same. In the company's museum of returned goods were many interesting and often amusing examples of products which had gone out decades before. A single specimen selected from this collection, a bottle of fluid extract of Mistletoe (See illustration) which came back after resting 27 years on a druggist's shelf, tells a tale of changes in styles of medication and of the presumption of a customer on the company's generosity.

Mr. Volstead is saddled with the blame for many of the evils of our land, but he was not blamed because a druggist's customer was was made deathly sick when he tried to get an alcoholic kick out of a pint dose of a highly medicated tonic, the normal dose of which is one tablespoonful. The company was given the blame and was asked to take back the remainder of the shipment.

One group of causes for returned goods has been referred to as that over which the supplier has no control. Even in this category of causes, the manufacturer's influence may be felt. Many customers react favorably to a letter of explanation which deals with the unreasonableness of expecting the manufacturer to accept for credit goods which have not been properly stored or used after they have reached their stores. Usually such customers do not repeat their requests for credit.

There are always some shipments of returned goods which must have special consideration and to which no general rules can apply. A company can hardly afford to lose a good customer of long standing whose attitude on returned goods has always been reasonable, by turning down such a customer's special request for credit on some goods returned through no neglect of the producer.

To summarize:—the experience of one company has been that the loss due to the returning of goods by customers can be materially reduced by keeping a record of all items returned so as to study the causes for their coming back and then by making a concerted effort to eliminate these causes, first by focusing attention on individual items among them, and second, by a general campaign to develop the

(Continued on page 85)

Lining the Metal Cap

By Victor A. Ryan*

Protection of the seal afforded by a metal cap from the action of the contents of the package has long been a real problem for drug manufacturers to solve. The adoption of a universal liner has long been the aim of many faced with this problem.

IN effecting a satisfactory seal with a metal cap it is obviously necessary to place within the cap a pulp board, felt paper, cork disc, or gusset of some kind containing a certain amount of elasticity. The protection of this gusset from the deleterious action of the contents of the package has caused considerable difficulty to the drug manufacturer via the route of returned goods. Most manufacturers have employed different methods of protecting the gusset from disintegration by either impregnating the gusset with some protective agent, or by placing in between the gusset and the bottle what is commonly termed oiled paper. This paper is either cemented to the gusset or loosely placed. With most drug manufacturers, each product has presented a separate problem, and a universal liner has not very often been used.

This so called oiled paper is a varnished paper prepared by baking successive coats of oil varnish on a paper base, and the suitability of the oiled paper for closure purposes entirely depends upon the quality of the varnish film on the paper.

The function of the oiled paper liner is to resist the chemical and physical reactions of the contents of the package, and at the same time to prevent the passage of air from the out-side to the contents. It must also resist abrasion when pressure is applied to the cap in closing the container. Therefore, it is quite obvious that the entire responsibility for completely sealing a product in glass rests upon this liner, as it must resist the action of moisture, and food acids, especially in the sealing of food stuffs. In the sealing of drugs, chemicals, and technical products, it is called upon to resist the action of much stronger chemicals and in some cases solvents, such as, alchohol, chloroform, etc.

The greatest requirements of a liner paper in connection with sealing foods and drugs, is that it must be non-toxic and contain nothing of a nature that would have a tendency to contaminate the products with which it comes in contact, otherwise, the food products would be contaminated and would not conform to the, "Pure Food and Drug Acts."

Common practice has more-or-less standardized oiled paper so that now it is nothing more than a pure oxidized linseed oil film, superimposed upon a sheet of paper; and, inasmuch as an oxidized linseed oil film is a definite organic compound, it consequently possesses definite inherent qualities. In view of this fact, it becomes quite evident that one paper cannot be suitable for packing all kinds of materials, as the linseed oil film contains definite percentages of compounds which are soluble in certain organic solvents. The film is also entirely saponifiable in nature and therefore easily acted upon by alkaline solutions.

In view of these apparent draw-backs, the linseed oil type of liner cannot be used for solutions or emulsions which contain carbonated or caustic alkalis or organic solvents, such as, alcohol, benzol, gasoline, turpentine, etc. Its use should be restricted to such products as; candies, condiments, jellies, jams, fruits, vegetables, mayonnaise, milk, butter and margarine products. It may also be used on such drugs and pharmaceuticals that are neutral in character and do not contain chloroform, ether, or other organic solvents.

The type of oiled paper to which we have just referred is usually supplied in a yellow color, which is the natural color of the oxidized linseed oil film.

There is also another type of paper which is prepared in black color and used for products containing reasonable amounts of alkali. The base of the varnish used in making the black paper liner is composed of inert asphalts and pitches and contains only a sufficient amount of linseed oil to render the film flexible. The paper depends upon the inactivity of the asphalts and pitches for its alkali resistance and its better resistance than the yellow paper to inorganic acids and strong organic acids.

The black paper is no doubt a better liner for drugs, chemicals, and technical products, but, never-the-less it also has inherent draw-backs, such as, solubility in mineral oils and such solvents as, benzol, gasoline, turpentine, etc.

Up to the present time these two types of paper have been the best available material for this particular use, and during the past number of years, much research work has been carried out to develop more or less an ideal liner paper. By an ideal liner paper we mean one which would be chemically inactive to all the materials it is desired to seal in glass. An ideal paper would have to be both acid

*Technical Director, Irvington Varnish & Insulator Company.

and alkali resistant and would not only have to be moisture proof but would have to be insoluble in all the usual organic solvents. As a result of research work towards this particular end, a new liner paper has been developed with a film obtained by condensation rather than by oxidation, and of such a nature that it will resist inorganic and organic acids, water, alkalis, and all types of solvents.

Recently a test was conducted with this paper in comparison with both the yellow and black oiled papers upon several products which had been giving difficulty with these ordinary types of papers. In making these tests, glass jars were filled to half their capacity and sealed with metal caps containing the respective oiled paper liners. The jars were then inverted so that the material was in contact with the liner throughout the entire test. They were then placed in an oven in the inverted position and kept at a temperature of 110°F.

The results of test were as follows:

Yellow Oiled Paper	Black Oiled Paper	Condensation Paper
Sample:—26° AMMONIUM HYDROXIDE		
After four minutes film was completely disintegrated and solution intensely colored.	After 72 hrs. film was completely disintegrated and solution intensely colored.	After 1100 hrs. film was hard, firm and but slightly darkened, solution being as clear as original.
Sample:—2% SODIUM HYDROXIDE		
After two minutes film was completely destroyed by saponification and liquid intensely colored.	After 10 hrs. film was destroyed by partial saponification and liquid was intensely colored.	After 350 hrs. film was unaffected, being in its original condition and liquid was only slightly colored.
Sample:—36% ACETIC ACID SOLUTION, containing 5% Salt (Sodium Chloride)		
After 24 hrs. liquid began to color and after 95 hrs. film was softened to point of disintegration.	After 288 hrs. liquid was colored and film softened to point of disintegration.	After 1100 hrs. film was unaffected and color of liquid same as original.
Sample:—PHOSPHORIC ACID CONCENTRATED		
After ½ hr liquid was colored and film began to soften, and after two hrs. film was completely disintegrated and appeared to be completely carbonized in area in contact with liquid.	After 12 hrs. film was completely disintegrated and liquid intensely colored.	After 450 hrs. film was hard and firm and both film and liquid unaffected.
Sample:—LACTIC ACID CONCENTRATED		
After 24 hrs. film was completely disintegrated and liquid colored.		After 400 hrs. film was hard, firm and unaffected, and liquid was original color.
Sample:—GLYCERINE PHOSPHORIC ACID SOLUTION 85% Glycerine, 9% Syrup, 1% Phosphoric Acid.		
After 48 hrs. film was apparently unaffected, but liquid was colored a dark red, and slightly turbid.	After 48 hrs. film was apparently unaffected but liquid was colored a dark red, and slightly turbid.	After 625 hrs. film was hard, firm and unaffected but liquid had developed a very light yellow color, although perfectly clear.
Sample:—SYRUP OF HYPOPHOSPHATES		
After 48 hrs. film was apparently unaffected but liquid had colored a dark red and was intensely turbid. After 288 hrs. film began to show evidences of incipient disintegration.	After 48 hrs. film was apparently unaffected but liquid had colored red and was intensely turbid. After 625 hrs. film was still apparently unaffected.	After 625 hrs. film was unaffected while liquid changed to a light yellow color but perfectly clear.
Sample:—ETHYL ETHER 95% Ethyl Alcohol (Ethanol) Methyl Alcohol (Methanol) Acetone		
After 24 hrs. the films softened to point of disintegration.	After ½ hr. the films softened to the point of disintegration.	After 1100 hrs. films were hard, firm, and unaffected.
Sample:—AMYL ACETATE		
After 20 hrs. the film softened to point of disintegration.	After ½ hr. film softened to point of disintegration.	After 240 hrs. the film is hard, firm, and unaffected.
Sample:—LISTERINE		
After 380 hrs. film softened to point of disintegration and liquid darkened in color and became turbid.	After 10 hrs. film softened to point of disintegration and liquid darkened in color and became turbid.	After 1000 hrs. both film and liquid were unaffected.
Sample:—ZONITE		
After one hr. film was completely disintegrated and solution intensely colored.	After 200 hrs. film was softened but liquid was apparently unaffected.	After 1000 hrs. film was hard, firm and unaffected with exception of being slightly lighter in color than original. Liquid was unaffected.
Sample:—SPIRITS OF NITRE		
After 10 hrs. film was softened and liquid darkened in color.	After 5 hrs. film softened and liquid was darkened in color.	After 1100 hrs. film was hard, firm and unaffected, with no apparent effect on liquid.
Sample:—MILK OF MAGNESIA		
After 48 hrs. film was softened to point of disintegration and surface of the magnesia was covered with a brown scum.	After 1100 hrs. film could be said to be unaffected, but on close examination, incipient disintegration could be detected on surface of film while surface of magnesia was covered with a light yellow scum in area in contact with liner.	After 1100 hrs. film was hard, firm, and unaffected, while surface of the magnesia was also unaffected and had not been the least discolored.

The above test shows conclusively the superiority of the resistance of the condensation paper over the ordinary types of paper now in common use, and suggests that it may be used to quite an advantage to replace the old type of paper. It would at least provide a means of sealing all products with one liner, which is a decided advantage over carrying several types of liner papers in stock.

Editor's Note—The paper referred to by Mr. Ryan is known under the trademarked name of "Harvel" paper.

ERGOT

With a short crop in Spain and Russian goods of doubtful quality and quantity the stage seemed prettily set for a raid on the price of this invaluable drug necessity. The inside story of this flyer in crude drug high finances is set forth here with some very pleasant morals for both speculators and drug consumers.

SINCE early September, the ergot market has occupied a position of outstanding prominence in the crude drug field, and while this prominence and publicity has hardly been merited by the natural course of ergot trading, it has caused high excitement and keen interest among those who are concerned with the market. The activities of one seller never previously identified with ergot or any other crude drug, and those of his associate who, while somewhat allied with the drug and chemical industry, also had never been known as an ergot factor, brought this market under the calcium light.

By virtue of their anticipated control, the market price of ergot was plotted to be inflated to a point beyond its intrinsic value. The drug manufacturing buyers were to be forced to submit to their dictates and commands. Modest predictions were made by these sellers, declaring that by this time of the year, consumers would be buying ergot at $6.00 per pound. They also made statements—which they later denied—that the Spanish suppliers had pledged their entire production to them and that they would buy all parcels of ergot that entered the country other than those consigned to themselves. The Russian crop was considered deficient in quality so that it would not be permitted to enter the country. Consumers therefore, would be compelled to fill up the pockets of these speculators or otherwise do without ergot; but unfortunately for these men and their financial supporters, the plan is apparently beaten.

The high prices which they had anticipated will not be reached, nor will those that they are currently quoting, be obtained. The relentless endeavors of the recognized crude drug dealers, exercised for the protection of themselves and the drug manufacturing buyers, blasted the hopes and expectations of the speculators. The larger manufacturers of fluid extract of ergot have all been sold ample requirements at a fair price, substantially lower than the original prices named by the speculator and even below the quoted market price. To clarify these operations, it is better that we review the status of the ergot market since the birth of this apparition.

At the outset of this attempted corner, ergot buying was light and the price lingered around 85c per pound. Stocks were gradually absorbed and thence the speculators assumed an aggressive position in the market. The initial quotation they made was $1.75 per pound. At that time, another lot of ergot was offered on the open market by a regular dealer in crude drugs at $1.40 per pound. When this was purchased, the speculators, who were the only holders of spot stocks, immediately advanced their price to $3.10 per pound. Meanwhile, one bonafide importer openly quoted prices of $1.45 per pound to the consuming trade and the speculative interests followed the policy of selling to the consumers only. This gesture was intended to disguise their exposed attempts at speculating at the expense of the drug manufacturing users but the price of $3.10 per pound, however, was still quoted, although little or no sales were made.

Meanwhile, during the past few months the regular importers of ergot have covered the larger consumers and have sold them ample supplies at $1.30 at $1.40 per pound. With underlying conditions such as they are, this price is truly representative of the market and yet it is not without profit to the sellers. They are not making sacrifices to cover what are alleged as shortages, the sales being merely normal transactions.

The speculators, at first in ignorance of these sales, finally became aware of them and of the ability of regular importers to quote low prices. Other means were then resorted to, in an effort to uphold their prices by forcing consumers to purchase their goods. They realized the futility of attempting to obtain $3.10 lb. for ergot and therefore reduced the price to $1.95 per pound. It is understood, that even this great concession failed to produce anything but mirth. They have charged the recognized sellers with selling sub-standard material and the columns of the daily press have contained bitter attacks on the material sold. It was called trash and branded as detrimental to the lives of women. They went so far as to attack the Pure Food Law and the conduct of the Food, Drug and Insecticide Administration in enforcing the regulations of the Department of Agriculture. They charged that the officials have been lax in preventing spurious or substandard goods from entering the country. They also accused the officials of mitigating the laws to suit the supposedly short interests. It is commonly known that lots of ergot have been rejected and returned to the shippers abroad and in defending Federal officials, importers of other medicinal products, who have lost a great deal of money by the scrutiny of the Government in preventing the entry of unfit merchandise, hasten to testify of their efficiency and immunity from reproach.

(*Continued on page 90*)

{ News of the Drug Industries }

Charles H. Phillips Establishes Right to "Milk of Magnesia" as Trade Mark

Court of Appeals Denies Request of McKesson & Robbins to Declare Trade Mark Public Property—Decision Hinged on Fact That the Term Was Open to General Use for a Short Time, Although No One Used It.

The right to use the term "Milk of Magnesia" in describing a product belongs solely to The Charles H. Phillips Chemical Co. as a trade mark, according to a decision of the Court of Appeals of the District of Columbia filed December 5.

The decision answers a suit instigated by McKeeson & Robbins against the Phillips Company to overcome the conditions in foreign markets, such as Great Britian and Cuba, where Phillips is the only one allowed to sell Milk of Magnesia. In this country the company has not protected its rights and many manufacturers have infringed the mark.

When questioned as to what procedure, if any, would be followed by the Phillips Company to stop infringement in this country an official of the company stated that no policy had been decided upon. He stated that the predecessors of the present management of the company had been very lax in this matter.

An authority on trade marks pointed out that it is impossible to stop infringement of a trade mark if the infringement has been allowed to exist for a period of years with protest on the part of the owner of the mark. In other words a trade mark must be protected if it is to be kept exclusive. However, the mark can still be protected against general use in that new factors can be stopped from using it.

The decision follows:

McKesson & Robbins, Inc., Appellant, *vs.* The Chas. H. Phillips Chemical Co.

Appeal from the Commissioner of Patents. Appellant Company instituted a proceeding in the Patent Office to cancel two registrations issued to the appellee Chemical Company.

The first mark consists of the words "Milk of Magnesia"; and the second mark consists of the words "Leche-de-Magnesia". The second mark is the Spanish equivalent of the first mark. The marks are both used on a preparation of Magnesia.

The cancellation proceeding is based on the ground that the term Milk of Magnesia was the name applied to an article covered by a patent granted to Charles H. Phillips and Lawrence Reid, who assigned their right to Charles H. Phillips, the predecessor in business of the appellee company. The marks in question were registered under the 10-year clause of the Trade-Mark Act of 1905; and it appears that the patents in question had expired prior to February 20, 1895.

It clearly appears that the registrant had exclusive use of the words as a trademark during the 10-year period, but it is insisted that on the expiration of the patents the name used on the patented article became generic and was open to anyone to use, which operated to bar the right of registration in the applicant.

The 10-year clause of the Trade-Mark Act gives practically unlimited right to the registration of a mark that had been "in actual or exclusive use as a trade-mark during the 10-year period immediately preceding the passage of the Act."

We are not unmindful of the well established line of decisions that the name by which a patented article has been designated falls into public use with the expiration of the patent. These cases are based upon the theory that anyone has a right to manufacture a patented article if the patent has expired, and has a like right to sell it by the name applied to the patented article. Singer Manufacturing Company vs. June, 163 U. S. 169. But the present case may be distinguished in that no such use had been appropriated of the patented article, and the patent expired prior to the 10-year period of exclusive use by appellant Company.

The right of registration under the 10-year clause has been defined in Thaddeus Davids Company vs. Davids & Davids, 233 U. S. 461, 470, as follows: "Their exclusive use as trade-marks for the stated period was deemed, in the judgment of Congress, a sufficient assurance that they had acquired a secondary meaning as the designation of the origin or ownership of the merchandise to which they were affixed. And it was manifestly in this limited character only that they received statutory recognition, and, on registration, became entitled to protection under the Act".

Where the public fails to avail itself of the right to manufacture the patented article and use the name by which it was designated, and 10 years exclusive use of the mark intervenes prior to the Trade-Mark Act of 1905, the party using the mark is entitled to registration under the 10-year clause of the Act. As said in Scandinavia Belting Company vs. Asbestos & Rubber Works of America, Inc., 257 Fed. 937, 960. "But there is another and conclusive reason why this claim that the name 'Scandinavia' became open to the public on the expiration of the patent is of no avail to the defendant, for if it were to be conceded that the doctrine of the Singer Case originally applied the evidence shows that the public did not avail itself of the right, and that now, because of the registration of the trade-mark under the 10 years' clause, it is not at liberty to violate the plaintiff's exclusive right".

We are therefore of the opinion that the Commissioner was right, and his decision is accordingly affirmed.

ABBOTT INVADES PHARMACEUTICALS

Buys Out the Milliken House and Will Expand and Push This Old St. Louis Line

Abbott Laboratories, North Chicago, Ill., acquires the firm of John T. Milliken & Co., St. Louis.

John T. Milliken & Co., which was established in 1894 by John T. Milliken, manufactures a full line of pharmaceuticals not manufactured by Abbott. Therefore, this purchase means that Abbot will enter the pharmaceutical branch of drug manufacturing.

Since the death of Mr. Milliken in 1921, the business has been conducted by the trustees of the estate, John D. Gillis being president.

Dr. Alfred S. Burdick, president of Abbott Laboratories, states that the business of the Milliken company will be continued for the present at the Milliken plant in St. Louis, being operated as a branch of the Abbott company as is the Dermatological Research Laboratories, acquired by Abbott in 1922.

A. C. S. HONORS DRUG CHEMISTS

Parr Succeeds George D. Rosengarten as President—Edward Mallinckrodt Among Those Elected Councilors-at-Large—Howe Chairman of Biological Chemistry Division and Cox Chairman of Medicinal Chemistry Division—Elections Result of Mail Ballot of 15,000 Members.

Samuel Wilson Parr, professor emeritus, industrial chemistry, University of Illinois, has succeeded Dr. George D. Rosengarten, of Philadelphia, as president of the American Chemical Society. Professor Parr, who is probably best known for the development of the Parr calorimeter, was born in Granville, Putnam County, Ill., Jan. 21, 1857. He received the degree of B. S. from University of Illinois in 1884; M. S. from Cornell in 1885; later studying at University of Berlin and Polytechnikum in Zurich.

Edward Mallinckrodt, Jr., vice-president of Mallinckrodt Chemical Works, was elected a Councilor-at-Large, as were Prof. Harry N. Holmes, head of Department of Chemistry in Oberlin College, and Treat B. Johnson, professor of organic chemistry at Yale.

Wm. J. Hale, director of organic chemical research for Dow Chemical Co., and Joel H. Hildebrand, professor of chemistry in University of California are tied for Councilor.

Officers of the Division of Biological Chemistry are: P. E. Howe, Washington, chairman; M. X. Sullivan, Washington, secretary.

Division of Medicinal Chemistry: A. W. Cox, Detroit, chairman; F. Fenger, Chicago, vice-chairman; A. E. Osterberg, Rochester, Minn., secretary.

Division of Colloid Chemistry: H. B. Weiser, Houston, chairman; F. E. Bartell, University of Michigan, secretary.

WATKINS TO PUSH LYONS

Dr. Lyons Perfect Tooth Powder and Dental Cream sold to R. L. Watkins Co., Cleveland. The sale embodies all manufacturing rights, patents, good will etc., and actual operations under the new ownership began last month.

The Lyons product is the oldest of all modern dentifrices, having been first marketed in 1866. It has also the distinction of being the only dentifrice with a wintergreen flavor.

The new owners intend to abandon the present manufacturing site in New York and will carry on production with their other products in Cleveland. The Lyons company recently adopted a new style container in an effort to maintain prices, but this package will be discontinued by the Watkins Co. An extensive advertising and sales promotion campaign will be conducted in newspapers and magazines for both the tooth powder and dental cream which will be promoted by the entire sales force of the Watkins Co., instead of by only one salesman as formerly handled by the Lyons Co.

E. R. Squibb & Sons erecting a new building across the street from present plant Columbia Heights, Brooklyn. The building occupied at present is only a few years old, but Squibb activities are crowding it so that a new one is necessary. The new building will be of concrete construction and will be twelve stories high, one story higher than the older building. Far greater floor space will be available in the new structure which is estimated to cost $650,000.

Banner Manufacturing Co., Detroit, (hair tonic) regains alcohol permit as result of decision of Judge Charles C. Simons, U. S. District Court, which finds that "the action of the department (prohibition) in revoking the permit was arbitrary and capricious and based upon nothing that may be dignified as evidence."

Walter J. Hinds, son of founder of A. S. Hinds, Portland, Me., cosmetics, and its production manager at time of its sale two years ago, dies Jan. 5, at the age of fifty-three.

Drug Industries Personalities

Sir Thomas Catto, pre-war vice-president of MacAndrews & Forbes (licorice subsidiary of the Tobacco Company), admitted Jan. 1 to London affiliate of the Morgan interest, Morgan, Grenfell & Co.

Charles H. Dickenson, severs connections with Dickenson, Renouf & Co., New York. Mr. Dickenson has not announced his future plans.

William F. Fischer, Magnus, Mabee & Reynard, admitted as tenth member of M. M. & R. Twenty Year Club, an organization of employees of the company with twenty years service.

Manual L. Hendler, president Hendler Creamery Co., Baltimore, entertains the Wedgewood Club of drug and allied trades in Baltimore.

Mennen Co., promotes W. M. Coatsworth, to sales manager, from three years as assistant sales manager.

F. K. Woodworth, sales manager, Ungerer & Co., severs connections with them, to enter the perfume manufacturing industry.

J. D. Dunn, J. B. Williams Co. Ltd., Canada, nominated director, Dominion Commercial Travellers' Association, Montreal.

J. A. Hynes, Chicago consulting chemist and formerly chemist of the Appraisers' Bureau, Chicago Custom House, speaks on "Reminiscences of a Custom House Chemist" at the December meeting of the Chicago Drug and Chemical Association.

L. T. Cooper, 52 years old, died at Dayton O., following an operation: born in Germantown, Ky., and there conducted a medicine business which he later expanded to national fame. He originated two widely known brands of proprietary medicines.

A. C. Schoenwaldt, resigns his position with George Uhe Inc., to enter business on his own account, operating under the name A. C. Schoenwaldt Co. He will conduct a brokerage business in pharmaceuticals, solvents, chemicals and allied products at 186 Remsen St., Brooklyn.

H. W. Hamilton, production manager, White Tar Co., of N. J., elected to presidency of Insecticide and Disenfectant Manufacturers Assn., succeeding Fred A. Hoyt. The other officers are: Evans E. A. Stone, Standard Oil Co. of N. J., vice-president; J. W. Bailey, Tangelfoot Co., vice-president; Harry W. Cole, Baird & McGuire Inc., secretary; Robert W. Jordan, Wm. E. Jordan & Bro., treasurer.

George White Butler, E. R. Squibb & Sons, died in New York of heart disease. He was born in Philadelphia, sixty-five years ago and for twenty-three years was in Squibbs' employ.

John F. Friden, research manager, Sun Tube Corp, Hillside, N. J., gone to Europe on a two months' tour to inspect collapsible tube manufacturing.

Russell R. Sloan, former manager vanilla bean department Dodge & Olcott resigns to enter business for himself with offices at 1 Fulton St., New York.

Allen B. Wrisley, Chicago soap manufacturer, died in Baltimore. Mr. Wrisley was born at Gill, Mass., 91 years ago and with the aid of his brother, formed Wrisley Brothers Soap Co. Death followed the realization of his most cherished business project, the erection of a new plant for the company. Last year when the Chicago factory was destroyed by fire, Mr. Wrisley took active charge and had 3,000,000 pounds in the making three days after the fire. Funeral services were held at Lombard, Ill.

WAR ON LOW VITAMIN OILS

Pure Food and Drugs Act to be Invoked in Barring from Interstate Commerce

Cod liver oil preparations deficient in vitamin content will be barred from interstate commerce in accordance with the provisions of the Food and Drugs Act, state officials of the Food, Drug and Insecticide Administration who have been actively engaged for some time past in investigating the potency of products now offered in the market.

The statement issued December 27 by the Administration follows:

Action is under way to remove from the channels of interstate commerce adulterated, misbranded, deteriorated, or otherwise illegal extracts of cod liver, cod liver oil, and preparations falsely alleged to contain the vitamins of cod liver oil.

During 1927 the Department of Agriculture conducted an extensive survey of extracts of cod liver oil and of various products alleged to contain the vitamins of cod liver oil found in interstate commerce. A biological examination for the presence of vitamins A and D in these products showed that practically all of the extracts and concentrates examined were virtually devoid of vitamin A and that few contained any material amount of vitamin D. Several of these articles have been used extensively in the manufacture of so-called cod liver oil compound tablets and other preparations.

The Federal food and drugs act makes the manufacturer or distributor of medicinal products responsible for marketing them in harmony with its provisions. Manufacturers should assure themselves that the cod liver oil vitamins are present in therapeutically significant amounts. The Department of Agriculture will take action against products that are labeled or represented as containing the cod liver oil vitamins, unless such products contain in the recommended dosage cod liver oil vitamins in quantities equivalent to those present in the normally prescribed doses of cod liver oil.

Products represented as concentrates of cod liver oil should contain vitamins A and D in concentrations reasonably higher than those of a good grade of cod liver oil. Statements regarding the therapeutic effects of the preparations should be limited to those that can be fully substantiated by the consensus of present-day medical opinion. Investigations of this class of products will be continued for the purpose of removing from the market adulterated, misbranded, deteriorated, or otherwise illegal preparations.

The Drug Exchange Bureau of the Baltimore Association of Commerce, at its annual meeting elected the following officers for the ensuing year: President, Horace Burrough, Jr., Burrough Bros. Manufacturing Company; first vice-president, Philip I. Heuisler, Emerson Drug Company; second vice-president, F. P. Wohnlich, Parke, Davis & Co.; Secretary, William J. Lowry, Gilbert Bros. & Co.; treasurer, J. Emory Bond, Leroy Oldham & Co. The new members of the executive committee are: Willoughby M. McCormick, McCormick & Co.; John C. Muth, Muth Bros. & Co., and H. H. Robinson, H. B. Gilpin Co.

Sharp & Dohme, Baltimore, appeal from the decision of the Chancery Court of England dismissing the action brought by Sharp & Dohme against Boots Pure Drug Co. This refers to alleged infringement by the Boots Company of the patent held by Sharp & Dohme for improvements in manufacture of hexyl resorcinol.

Parfumerie Rigaud, Paris, awards distribution contract for Rigaud products in United States, to E. Fougera & Co., New York to succeed George Borgfeldt & Co., according to Montague M. Sterling, president of Fougera.

The Kellogg Co., purchase Kaffee Hag Corp., (caffeine) and George Grund, president Kaffee Hag, continues to conduct the company's Cleveland plant.

GLYCERIN RESEARCH TO CONTINUE

The Glycerin Research Committee of the Glycerin Producers' Association is now made up of the following members: N. N. Dalton, Palmolive-Peet Co., chairman; John R. Koltz, Colgate & Co.; E. G. Holloway, James S. Kirk & Co.; J. W. Bodman, Lever Brothers & Co.; H. S. Coith, Proctor & Gamble Co.; J. R. Powell, Amour & Co.

An industrial fellowship has been maintained at Miner Laboratories, Chicago, for over a year to conduct research into glycerin uses. During the past month the funds for this purpose have been increased so that an additional fellowship has been established.

The committee is primarily engaged in discovering new uses and new markets for glycerin, and it is anticipated that an interesting new development will be announced as a result of this research.

PENICK AGAIN TRADE BOARD CHAIRMAN

S. P. Penick, of S. B. Penick & Co., is re-elected chairman of the Drug & Chemical Section of the New York Board of Trade & Transportation at its annual meeting, Jan. 10, at the Drug & Chemical Club, New York. Charles A. Prickett of Upjohn Co., named vice-chairman; H. B. Shattuck, of Abbott Laboratories, treasurer; Charles L. Huisking, of Charles L. Huisking & Co., representative of Drug & Chemical Section as director in New York Board of Trade & Transportation. The executive committee members are: Percy C. Magnus, of Magnus, Maybee & Reynard; P. Samuel Rigney, of Roessler & Hasslacher Chemical Co.; A. Bakst, of Bakst Brothers; S. W. Fraser, of Burroughs Wellcome Co.; Frank P. McDonough, of New York Quinine & Chemical Works; and Edward Zink, of Eli Lilly & Co.

FRITSCHE OFFERS SYNTHETIC MENTHOL

Synthetic menthol from the laboratories of Schimmel & Co. is now offered in this country by Fritsche Brothers, Inc., New York. The product is laevo-rotary, as is the natural product. It has a melting point of 35°, and in appearance and odor is very similar to the natural. The physical properties lie between the inactive (racemic) methol from thymol or piperitone and the natural d-menthol melting point 43-44°. It has been found to be not only slightly more active physiologically, but actually less toxic than the natural product.

"To better serve the interests of the trade," says Chas. L. Huisking & Co., Inc., in their market report of Jan. 5, 1928, "we are making a change in the publication of our market reports and price lists. Beginning Jan. 15 we will publish the market reports semi-monthly and the price lists monthly. We believe that this change in our long established custom of issuing market reports weekly and price lists bi-weekly will tend to greater efficiency insomuch as the price lists published on the first of each month will show the actual market prices prevailing at time of issue, and our market reports issued on the 1st and 15th of each month will enable us to more concretely give our views on market conditions."

Mrs. Mae L. Brearton, is plaintiff in a suit against the estate of Elden C. DeWitt, deceased president of E. C. DeWitt & Co., New York. The plaintiff alleges that in return for using her as an experiment in seeking a cure for an infectious disease, he agreed to pay $1,000 monthly for the remainder of her life. The fee was paid during Mr. De Witt's life but was discontinued after his death.

Dickinson, Brown & Co., New York, is formed by Charles H. Dickinson and William A. Brown to act as brokers and manufacturers' agents. Firm's address is 30 Church St. and telephone, Cortlandt 7860. Mr. Dickinson was formerly partner of Dickinson, Renouf & Co., New York.

N. W. D. A. COMMITTEE ON QUALITY CHECKS U. S. A. ETHER AND IODINE

Ether U.S.P. and Tincture of Iodine have been checked for quality by the Committee on Quality of Medicinal Products of the N. W. D. A. The committee, under the chairmanship of A. C. Boylston, is making reports at intervals.

With reference to ether the committee says:

"It has been recognized by the manufacturers of ether for some time that minute traces of peroxides or aldehydes will develop during the storage of Ether. Although these minute impurities may not be of practical significance they do nevertheless occur from time to time in quantities which exceed the U.S.P. limits. A committee of the manufacturers has been working on this problem for a year or more and it is hoped that the difficulty will be solved before another year."

Complaints on tincture of iodine, says the committee, have usually been on iodine content, although in a few cases the alcohol content has fallen slightly below the U.S.P. limits. One difficulty, however, seems to be that if the Pharmacopoeial method for the preparation of Tincture of Iodine is followed strictly, the results will not check exactly with the requirements for alcohol content. The difference, however, is rather slight and the confusion which it has caused has been not very general.

It is quite generally known that the iodide market has been depressed during the past year by iodide residues which have been recovered from the illegitimate alcohol recovery from Tincture of Iodine. Another result of this alcohol recovery has been that some of the so-called U.S.P. iodide from irregular manufacturers has not been strictly U.S.P. It is safer, therefore, for druggists to depend upon securing their supplies from established and recognized manufacturers in order to insure a strictly U.S.P. quality of goods. It is possible that the Government will take some steps before long to restrict the sale of Tincture of Iodine and in that case the trouble will right itself.

VITAMIN D IN DOG FISH

Dog fish liver oil is equivalent in medicinal value to the best cod liver oil on the market, states a report of investigations made by the Prince Rupert Fisheries Experimental Station of Canada. The report is as follows:

Scientists at Prince Rupert Fisheries Experimental Station of Biological Board of Canada have received from Professor Asmundson, professor of poultry husbandry at University of British Columbia, confirmation of the local stations preliminary experiments relative to the content of Vitamin D in dog fish liver oil, according to information published in the Prince Rupert News of December 3 and forwarded to the Department of Commerce.

Professor Asmundson reports, as a result of experiments that he himself has carried out, that dog fish liver oil is equivalent in medicinal values to the best cod liver oil on the market. This checks up with findings made by Acting Director H. N. Brocklesby who has had the experiments personally in hand.

Offices of P. R. Dryer, Inc., and Magnus, Maybee, & Reynard, both on Cliff st., New York, were visited by thieves during the night of Jan. 12. Dryer suffered a loss of $50 in cash and damage, and M M & R were relieved of $200 in cash.

Judge Morris Soper, United States District Court, Baltimore, on Dec. 27 orders return of five barrels of iodine to Sol Gasser on grounds of illegal seizure. Iodine seized July 22 by dry agents, was alleged to be half strength product which might be converted into beverage uses. Court ruled no probable cause for seizure.

Agreement of a standard of 7.61 pounds to the gallon for olive oil and 7.7 pounds to the gallon for all other edible oils, is reached at trade practice conference called by Federal Trade Commission in New York.

CUTLER'S ANNUAL MESSAGE TO N. W. D. A.

National Wholesale Druggists' Association's president, Sewall Cutler, in his new year's message to the association enters a plea for individual and collective efforts "to ascertain the important and fundamental facts having a bearing on the problems of distribution." The problems confronting the trade according to President Cutler are first: Protection for the retail druggist in competition with outside interests encroaching on the field of his activities in a manner contrary to fair trade practices; second: Prevention of extension of price-cutting; third: Support of Druggists' Research Bureau; fourth: Ascertain facts relative to operating costs in different departments of wholesale drug house; fifth: Adoption of new constitution and by-laws with special attention to increasing revenue and eliminating obsolete committees; sixth: Co-operation with allied trade associations in determining fair trade practices; seventh: Encouraging local drug associations; eighth: Distribution of new information pertaining to drug business; ninth: Adoption of uniform code of business principles; tenth: Encourage adoption modern merchandising methods among retail druggists; eleventh: Recognition of fact that demoralization of competitor's market is no advantage; and twelfth: Support of association in program adopted at last convention and especially in carrying out suggestions enumerated above.

James McInnes Jr., for several years connected with Seaboard Chemical Co., New York, and for some time past secretary of that concern, is now sales manager for Seaboard in addition to his duties as secretary. The promotion of Mr. McInnes to the position of sales manager came as a result of the severance of relation of the Seaboard company with its former sales manager, Edward S. Wright.

O. D. O. TRADE MARK SUIT ENDS

The use of O. D. O. as a trade mark on a liniment was granted to Ottavio de Oto by the decision of Court of Appeals. The Odol Corp., filed an objection to the use of this mark for a liniment, holding it to be conflicting with, "Odol," their preparation for the teeth, mouth and breath. The Patent Commissioner had previously decreed that the patents are not so similar as to confuse the trade, nor do they possess the same descriptive qualities.

Chicago drug and chemical associations plan erection of building to house drug and chemical firms. New structure is to be thirty stories high, will have all conveniences of modern office building as well as warehousing facilities and a railroad siding. The plan is indorsed by all chemical associations in that city.

Charles E. Munson, president, Columbus Pharmacal Co., Columbus, Ohio, died at his home, age 76. He was vice-president, Peoples Saving Association; trustee, Munson Association; president, Munson Music Co; director Columbus Y. M. C. A. and associated with many other social welfare organizations.

A pamphlet of standards and definitions which includes 51 spices, 24 flavoring extracts, and 15 edible oils and facts, has been issued by the Food, Drug and Insecticide Administration of the Department of Agriculture.

The Third Drug Trade Get-Together of the Drug & Chemical Section, New York Board of Trade & Transportation will be held on Thursday, March 15 at the Waldorf-Astoria Hotel, New York.

Coming Meetings

Owl Drug Co. Officials' Conference. Jan. 20 San Francisco.
California Academy of Medicine. Jan. 21, San Francisco.
Missouri Bottlers of Carbonated Beverages. Jan. 26-27. Sedalia, Mo.
Tri-State Medical Association. Jan. Memphis, Tenn.
Rexall Clubs of Minnesota, North Dakota, South Dakota, and West Virginia. Feb. 13-14. Minneapolis, Minn.
Minnesota Pharmaceutical Association. Feb. 14-16. Minneapolis, Minn.
Ohio State Pharmaceutical Association. Feb. 20, Dayton, O.
Northwestern Drug Show. Feb. 28-March 2. Des Moines, Ia.
Iowa State Pharmaceutical Association. Feb. 28-March 2. Des Moines, Ia.
Rexall Druggists of Wisconsin. March. Milwaukee, Wis.
United Drug Co. April 10-11. Los Angeles, Cal.
Medical Society of State of North Carolina. April 17. Pinehurst, N. C.
New York State Homeopathic Society. April 24-25, New York.
South Carolina State Medical Association. April. Columbia, S. C.
Kansas Pharmaceutical Association. April. Wichita, Kan.
Rexall Clubs Southern Section. April. Los Angeles, Cal.
Rexall Clubs Pacific Northwest. April or May. Spokane, Wash.
Hawaii Medical Association. April or May. Hilo, Hawaii.
Ohio State Medical Association. May 1-3. Cincinnati, O.
Texas State Medical Association. May 8-10. Galveston, Tex.
Mississippi State Medical Association. May 8-10. Meridan, Miss.
Medical Association of Georgia. May 9-11. Savannah, Ga.
Iowa State Medical Society. May 9-11. Cedar Rapids, Ia.
New Hampshire State Medical Society. May 14-16. Manchester, N. H.
Illinois State Medical Society. May 15-17. Chicago.
American Pharmaceutical Manufacturers Association. May. Chatham Bars, Me.
Nebraska State Medical Association. May. Hastings, Neb.
Ontario Medical Association. May 29-June 1. Kingston, Ont.
Association of Food & Drug Officials of Southern Central States. Spring. Lexington, Ky.
American Pharmalogical Society. Spring. Ann Arbor, Mich.
American Society Biological Chemists. Spring. Ann Arbor, Mich.
American Manufacturers Toilet Articles. Spring. Atlantic City.
Massachusetts Medical Society. June 5-6. Worcester, Mass.
Medical Society of New Jersey. June 6-9. Atlantic City, N. J.
Massachusetts State Pharmaceutical Association. June 8-9. Swampscott, Mass.
American Medical Association. June 11-15. Minneapolis, Minn.
Arkansas State Pharmaceutical Association. June 12-14. Hot Springs, Ark.
Texas State Pharmaceutical Association. June 12-14. Abilene, Tex.
West Virginia State Pharmaceutical Association. June 12-13. White Sulphur Springs, W. Va.
Mississippi State Pharmaceutical Association. June 13-14. Jackson, Miss.
Minnesota State Medical Association. June 18. Minneapolis, Minn.
Kentucky Pharmaceutical Association. June 19-21. Mayfield, Ky.
Missouri Pharmaceutical Travelers Asscoiation. June 19-22. Sedalia, Mo.
New York State Pharmaceutical Association. June 19-22. Saratoga Springs, N. Y.
Wisconsin State Pharmacueucut Assocsation. June 36-28 Green Lake, Wis.
Pennyslvania State Pharmaceutical Association. June 19-21. Buena Vista Springs, Pa.
California Retail Drug Association. June. San Diego, Cal.

Bill To Regulate Toilet Article Sale Introduced By Copeland

A bill regulating manufacture and sale of toilet articles was introduced in the Senate, Jan. 5, by Senator Royal S. Copeland, New York. It differs from the measure which has been under consideration by the American Medical Association in that it is designed to be simpler and more easy of enforcement. It also differs from the draft of the proposed bill previously made public by Senator Copeland (DRUG MARKETS, Nov. 29, 1927) having been changed to meet certain suggestions of the trade. These suggestions materialized as a result of a conference held in New York, Dec. 23, at which time it became evident that the danger to the public from adulterated toilet goods was not great. As a result the original plan was revised and it is now felt that the bill as proposed will aid the toilet goods industry in that it will serve as protection against vicious legislation.

The revised draft eliminates the earlier stipulation that ingredients in cosmetics and toilet preparations be up to the standards of the United States Pharmacopeia or the National Formulary if mentioned in these works, and provides that the name of the distributor may be substituted for the name of the manufacturer on the label of a toilet preparation.

The bill would prevent the shipment of preparations containing arsenic, lead salts, paraphenylenediamine, paratolulenediamine, paraphenyldiamine, mercury and all compounds of mercury except calomel, or phenol in excess of 10 per cent. by weight in a fatty or other solid or semisolid base, or in excess of three per cent. by weight in any solution. It also provides that the name and address of the manufacturer, packer or distributor be printed on the label. Retailers are to be exempt from the penalties of the act if they have a guaranty from the producer or jobber that the goods are not misbranded.

MORE FOOLISH LEGAL ALCOHOLISM

An order prohibiting the sale of patent and proprietary medicines, extracts, tinctures and other similar preparations containing alcohol has been passed by West Virginia Prohibition Department. The order issued under the State law, prevents physicians from prescribing tincture or similar products and the ruling makes it necessary to obtain the approval of the commissioner before any brand of rubbing alcohol, toilet waters, perfumes, hairtonics and lotions can be offered for sale. The order is effective January 1st, according to Ross Wells, Prohibition Commissioner.

Charles Wesley Dunn, general counsel, American food and pharmaceutical manufacturers, represented by American Grocery Specialty Manufacturers' Association and American Pharmaceutical Manufacturers' Association; general counsel also for National Association of Retail Grocers, various food and pharmaceutical associations and individual manufacturers; compiles and annotates a three-volume edition of all Federal and State laws pertaining to foods and drugs. Title of the work is "Dunn's Food and Drug Laws," publishers, United States Corporation Co., New York.

Lithium salts and other by-products to be manufactured in England from lithium ore produced in Canada. Silver Leaf Mining Syndicate has been re-capitalized at $150,000 to carry out the project. Production is expected to be under way by the end of the year.

Pfaltz & Bauer, New York, secure exclusive agency in this country and Canada for Sarnov olive oils. S. A. Raffinerie Nazionali, Italy, is the producer, operating one of the largest refineries in Europe. Spot stocks under Sarnov or private label will be carried.

The Financial Markets

CROWN CORK AND SEAL MERGER PLANS

Together With New Process Cork Co. Forms Powerful Consolidation—Current Assets Total Over Six Million Dollars—Outside Investments More Than A Million Dollars—Wm. Wrigley, Jr. Co. Will Show Increased Earning For 1927—P. R. Dreyer Is Incorporated.

Crown Cork and Seal Co. Inc., recently formed to acquire assets and business of New Process Cork Co. and the Crown Cork and Seal Co., Baltimore , starts its corporate existence with a financial structure of a strength that would allow considerable expansion in business without strain, according to Chicago "Journal of Commerce." Pro forma consolidated balance sheet as of September 30, 1927, giving effect to the new financing, shows current assets totaling $6,277,518, including cash of $876,543, and inventories of $3,598,849, against current liabilities of $946,068, leaving a net working capital of $5,331,450. Land, buildings and equipment, after deduction of depreciation reserves, are carried at $5,287,136, and patents and processes at $1,830,107. Investments in affiliated companies not consolidated are valued at $1,245,608.

Capitalization for a newly consolidated industrial shows a generous proportion of the entire capital invested in the business to have been supplied by the capital stock interest. The 145,500 shares of no par common stock have a combined balance sheet equity of $8,670,811, and are junior to $5,625,000 of funded debt. Of the funded debt, an issue of $5,500,000 of 20-year 6 per cent. bonds which have recently been sold constitute the major part. These constitute a first lien on the entire fixed property of the company now owned or hereafter acquired subject to the rights of the non-assenting shareholders of the old companies. Full provision has been made for these by the deposit with a trustee of a reserve in cash covering these claims.

WRIGLEY, JR. CO. TO SHOW INCREASE

By the inclusion of foreign and other subsidiary companies in a consolidated balance sheet, the annual report of the William Wrigley Jr. Co. for 1927 is expected to show a year's net profit in excess of $10,000,000, or something better than $5.25 per share on the 1,800,000 no par shares outstanding. The 1926 net profit of the parent company alone was $9,100,170. The new basis of accounting will add at least $1,000,000 to the surplus account, and each quarter of this past year, up to September 30, when the last statement was published showed a gain over the year before.

In addition to the regular dividend of 25c a month the company in January pays 50c extra, a total disbursement for the quarter of $2,250,000, after which the new consolidated balance sheet should show a surplus in the neighborhood of $24,000,000, equal to about $13.50 a share.

Rockford, Ill. — Edison Laboratories, Inc., transfers plant from Chicago to this city and increases capital to $20,000. Board of directors will be increased to nine members. Present members are John F. Wester, president, Wester Drug Co. and vice-president, Rockford Varnish Co.; Dr. H. W. Edison, owner of patents on company's products; Evans A. Anderson and C. G. Kussy.

Final Federal tax refund list made public by House Committee on Expenditures contains following refunds: Capes-Viscose, Delawanna, N. J., $2,113; von, Isakovies, Mary Monticello, $3,094; Willis Sharp Kilmer, Binghamton, $31,292; Milburn Co., Buffalo, $4,492; Maltrop Co., Buffalo, $2,001; Norwich Pharmacal Co., $5,851; Whitall-Tatum Co., Philadelphia, $19,990.

Hinde & Dauch Paper Co., Sandusky, O., has merged with Thompson & Norris Co., Brooklyn. It is understood that Mr. Norris will be the manager of the eastern district. The merger will give Hinde & Dauch two large distributing and manufacturing centres, one in the east and one in the middle west.

American Home Products Corp. Cincinnati, to issue 96,000 additional shares common stock, no par value, making total amount of 534,000 shares outstanding. Additional issue to cover recent purchase of Bi-So-Dol Co., New York, manufacturers of digestans. The purchase deal involves over $5,000,000.

P. R. Dreyer, NewYork, was incorporated Jan.1 as P.R.Dreyer Inc. Officers of the new corporation are: P. R. Dreyer, president; F. C. Theile, vice-president; Ernest Vetterlein, treasurer; O. C. Isbell, secretary.

First Mortgage Philadelphia Wholesale Drug Co. 6% Bonds are being sought to a total of $5,000 worth at a price of $101, says "Druco News".

Drug Industry Bonds

1928 Jan. 1st Bid	1928 Jan. 1st Asked	1927 High	1927 Low	1926 High	1926 Low	Sales In Dec.	Sales Since Jan. 1, '27	ISSUE	Date Due	Int. %	Int. Period	Orig. (1) Offering	1926 High	1926 Low
								NEW YORK STOCK EXCHANGE						
131	130½	133½	103½			2,228	4,966,000	Liq Carbonic Corp	1941	6	F. A.	5,000	107	98
108	108	108½	106½			147	1,036,000	United Drug	1944	6	A. O. 15	12,500	107½	103½
101⅜	101⅞	102½	97¼			273	1,634,000	Wilson & Co	1941	6	A. O.	25,000	101⅜	95⅜
Bid	Asked							NEW YORK CURB						
100½	101	101½	97¼			69,000		Mont. Ward	1946	5	M. N.	...	92½	96½
102½	103	103	98			31,000		Nat. Dist Prod	1945	6½	J. D. 15	3,500	99½	95
99	100½	100	95½			16,000		Park & Tilford	1936	6	J. D.	2,000	96	96
89½	88¾	91½	85			295,000		Schulte R. E.	1935	6	J. D.	...	99	92
100⅜	100½	100½	99			310,000		Swift and Co	1932	5	A. O.	50,000	99½	96
88¾	89¼	99	90			164,000		U. S. Ind. Alc	1941	6½	M. N.	...	99	96½
								BOSTON						
103	103	102½	101			0,000		Swift and Co	1944	5	J. J.	50,000	102½	99½
								CHICAGO						
102½	102½	103⅜	101⅜			14,800		Swift and Co	1944	5	J. J.	50,000	102½	99½
101⅜	101⅜	102⅜	97¼					Wilson & Co	1941	6	A. O.	25,000	101⅜	95⅜
								UNLISTED						
				98½	Bid			Monsanto	1940	7	F. A.	2,353	...	...
								Sen Sen Chiclet	1929	6	J. D.	1 423	99	86

Drug Industry Stocks

1928 Bid	1928 Asked	1927 High	1927 Low	1926 High	1926 Low	Sales In Dec.	Sales Since Jan. 1, '27	ISSUES	Par $	Shares Listed	An. Rate	Earnings $-per share-$ 1927	Earnings $-per share-$ 1926
								NEW YORK STOCK EXCHANGE					
153	153½	169½	131	148⅝	106	57,000	3,604,900	Allied Chem	No	2,178,109	$4.50		9.79
74½	75	77⅝	43⅜	*344⅜	38⅛	1,557,200	8,337,700	American Can	25	2,473,918	2.00		4.31
140	142	141½	126	130½	121	2,500	28,900	pfd	100	412,333	7.00		33.38
72¼	72⅜	74¼	36	51	28	16,860	257,800	American Chicle	...	186,595	3.00	9 mo. 5.43	5.75
109⅝	110	110	90	98	85	503	4,133	pfd	...	1,375	7.00	9 mo. 32.53	37.24
13½	13⅝	15½	9⅜	10⅜	4½	95,400	1,132,800	American Drug Syn	10	1,000,000	.80	6 mo. 0.52	Nil
66½	67	71	30½	30½	23⅝	108,500	706,100	American Home Products	No	300,000	2.00	4.25	3.69
66	67	69½	53⅛	56⅛	53¼	13,000	164,300	Bon Ami A	No	100,000	4.75	11.25	13.32
56½	56¾	60⅛	36	52⅜	32½	85,100	1,021,700	Canada Dry Ginger Ale	No	450,694	2.00	5.00	3.85
128	128½	131	96½	174¾	128	34,300	734,100	Coco Cola	No	500,000	7.00	9 mo. 8.64	16.50
167¼	169	203	145	237	118¼	95,000	381,600	Comm Sol	No	217,722	8.00	9 mo. 7.58	14.13
84	84½	86⅞	58¼	92½	70	72,000	725,400	Cont. Can	No	500,000	6.00	7 mo. 4.55	6.36
123	124½	126	120	126	117		3,400	pfd	100	52,930	7.00	7 mo. 47.07	70.55
64⅞	65	68	46⅞	51⅜	35⅜	399,975	3,165,400	Corn Products	25	2,530,000	3.00	9 mo. 2.69	4.03
139	141	139⅜	128	130½	122½	1,460	14,400	pfd	100	250,000	7.00	9 mo. 32.50	47.73
127½	127¾	123	56	62	44½	49,400	324,100	Coty Inc	No	309,300	5.00	11.50	9.52
		80	46					Douglas Pectin Corp	No	300,000	2.50		3.52
119½	120	118	105½	360	149	2,000	35,100	Dupont deb	100	799,268	6.00	9 mo. 45.45	52.51
321	322½	343⅞	168	136¾	106⅝	135,000	1,996,300	DuPont de Nemours	No	2,661,658	9.50	9 mo. 12.30	13.98
70	70½	71½	46½	56½	32½	300,000	3,246,500	Fleischmann	No	4,500,000	3.00	9 mo. 3.20	4.08
66½	66⅞	20⅜	43½	48⅜	40	32,100	267,400	Household Prod	No	575,000	3.50	5.50	5.22
71⅜	71½	77½	45⅞	881	42⅜	90,300	1,079,600	Kresge	10	3,678,619	1.20	9 mo. 2.44	3.36
113½	117	118	110½	114¾	112½	293	4,363	pfd	100	20,000	7.00	9 mo. 454.79	625.22
82½	82½	88½	66			114,300	1,121,300	Lambert Co	No	281,250	2.50	7.75	...
39½	40	43	32⅝	41⅛	30¾	97,690	524,200	Lehn and Fink	No	265,000	3.00	5.00	5.30
34¼	34⅜	34½	19¼			13,900	94,900	Life Savers	No	500,000	1.60	6 mo. 1.18	2.27
76	76⅜	78½	45	58⅞	43¼	30,800	406,800	Liquid Carbonic	No	125,000	3.60	5.90	11.34
87	87⅝	90	55			1,660	15,600	McCrory Stores	No	376,709	1.20	9 mo. 2.60	4.80
71	75	89	55					Merck & Co.	100	33,950	4.00		Nil
37⅜	39	39	37			1,367		Monsanto Chem	50	62,000	...	9 mo. 5.17	5.60
122½	123	123½	60½	82	56	746,600	3,976,800	Montgomery & Ward	10	1,141,251	1.00		6.25
63	67	56⅜	17	73½	37½	14,900	113,400	Nat'l Dist pfd	No	109,795	...	9 mo. 1.62	Nil
34½	34⅝	46⅜	20	28⅛	18⅜	196,000	1,109,900	Park & Tilford	No	200,000	...	9 mo. 2.44	2.67
22⅜	23	27⅛	19½			24,000	395,700	Penick & Ford	No	433,773	...	9 mo. 1.48	1.37
125⅞	126	126⅛	92⅝	124⅛	75½	335,000	2,419,600	Postum Co	No	1,467,365	5.00	8.50	7.71
65½	69½	71	55				4,295	Prophylactic Brush	No	100,000	4.50	6 mo. 2.88	5.34
120	121	57	47	138½	42½	93,000	1,299,100	Schulte	No	1,116,145	8.00	6 mo. 2.41	4.82
87½	87⅞	91⅜	51	58⅝	44	377,950	2,821,000	Sears & Roebuck	No	4,200,000	2.50		5.21
39⅝	39⅞	41⅜	35⅛	46⅜	37½	767,000	2,274,700	Standard Oil of N. J	25	24,262,532	1.00		5.01
138¾	139½	143½	90⅜	96½	75	28,000	271,800	Sterling Products	No	625,000	6.00	9.50	8.65
14	14⅛	14	7			2,100	28,500	Sweets Am	50	111,773	...	9 mo. 0.32	0.42
196	197	200½	159	174	134	44,000	404,200	United Drug	100	380,638	9.00	9 mo. 7.87	13.02
60½	61½	60½	50½	59	55½	3,290	36,600	pfd	50	651,270	3.50	9 mo. 7.40	11.11
108	109	111⅛	69	84½	45½	119,000	1,416,500	U. S. Ind. Alc	100	240,000	5.00		7.04
117¼	121	121	107½	114⅝	99¼	4,000	785,900	pfd	100	60,000	7.00		35.19
59	59⅜	63⅜	48			41,000	384,400	Vick Chem Co	No	400,000	4.00	5.36	5.30
24½	25	39½	20½			49,100	1,028,300	Vivaudau	No	358,020	3.00	6 mo. 1.85	3.39
98	100	118½	95			633	25,743	pfd	100	16,600	7.00	9 mo. 39.05	79.51
35⅜	36	41½	26			11,300	197,500	White Rock	No	200,000	2.50	5.75	3.82
12	12½	17⅞	10	14⅜	6	132,500	355,600	Wilson	No	434,983	...		...
192½	193	198¼	117⅜	222	135¼	226,000	1,839,900	Woolworth, F. W	25	2,600,000	6.00		10.81
70½	71½	72¾	50⅜	56¾	47	10,700	92,800	Wrigley	No	1,800,000	3.50	9 mo. 4.31	5.05
								NEW YORK CURB					
19½	20	16½	14½			12,700		Allison Drug Co	No	.....	...		...
169	169½	169	101	116	91¼			Borden Co	50	630,896	5.00		10.86
116	120	126	76½	82½	65			Ches Mfg Co	25	120,000	4.00		...
23	23	26½	17½	20	13½	1,833		Forhans	No	150,000	1.00		...
20½	20⅝	23⅜	18½	26	21¼	7,633	19,933	Hires	No	90,000	2.00	2.53	...
20⅜	21	21¼	18					May Drug Stores	10	10,000	1.50		...
38		40	27½	*135	111	1,367	19,732	Parke Davis & Co	25	949,577	2.00		7.50
118	120-	122	107½	34½	20	12,100	68,100	Peoples Drug Store	No	100,000	1.00		3.51
249	249	250	177	184	142½	3,565	2.	Proctor & Gamble	20	1,250,000	4.75		9.17
125	125½	130	115½			26.17	114,458	Swift & Co	100	1,500,000	8.00	8.13	10.43
								CLEVELAND					
112½			70	80	70	113		Dow Chem Co	No	100,000	4.00		...
104½	106	106½	100	102	100	60		pfd	100	18,297	7.00		...
								PITTSBURGH					
20½	21	17½	22					May Drug Stores	10	10,000	$1.50		...
								CHICAGO					
38½	39	39	37			14,962	26,498	Monsanto Chem	50	62,000	...	9 mo. 5.17	...
122½	123	125½	61½	82	56		535,331	Montgomery & Ward	10	1,141,251	1.00		6.25
87½	87¾	91⅜	52	58⅜	44	110,892	467,296	Sears & Roebuck	No	4,200,000	2.50		5.21
125	125⅜	130	115⅜	174	134	2,617	(c) 17,417	Swift & Co	100	1,500,000	8.00		10.43
70½	71½	73	51	56½	47	21,960	123,460	Wrigley	No	1,800,000	3.50	9 mo. 3.20	5.05
								CINCINNATI					
128	128½	131	96½	174¾	128	990	15,375	Coco Cola	No	500,000	7.00	9 mo. 9.64	16.50
39	39	42½	36	300	275			Dow Drug Co	100	60,000	8.00		...
126		126	125	112	110			pfd	100	40,000	7.00		...
		126¾	113¼	56½	32½			Fleischmann	No	4,500,000	2.50	9 mo. 8.64	4.08
248	250	250	177	116	112	3,565		Proctor & Gamble	20	1,250,000	4.75		9.17
								BOSTON					
125¼	125½	130½	115	174	134	1,539	2,143	Swift & Co	100	1,500,000	8.00		10.4
								DETROIT					
20	20	21½	20					Allison Drug Co	No	.....	...	9 mo. 2.03	...
								BALTIMORE					
113	113	114	103			25	987	Sharp & Dohme pfd	100	1,000,000	7.00		...
								UNLISTED					
								American Solvents	No	160,000	...		...
								Calco Chem pfd	100	60,000	8.00		...
								Kinney	100	10,000	...		...
								Kolynos	100	.....	8.00		...
109		109	102	105	104			McKesson & Robbins	No	100,000	1.00		...
70	80			20	10			Mulford, H. K. & Co	50	54,823	3%		...
								Nat'l Drug & Chem Co	100	18,357	...		...
115	120	131	101	106	43			Newport Chem	1	912,198	4%		...
								Squibbs	20	40,000	6.00		...
				120	Bid			pfd	100	28,354	8.00		...

*Old Stock

Prices Current

Medicinal, Aromatic, and Photographic Chemicals, Crude Drugs, Spices, Essential Oils and Concentrates, Miscellaneous Raw Materials, etc.

Chemical prices quoted are of American manufacturers, spot New York, f. o. b. for immediate shipment, unless otherwise specified.

Products sold f. o. b. works are so specified. Imported chemicals are so designated. Resale stocks, when a market factor, are indicated "second hand."

Crude Drugs and Essential Oils are quoted f. o. b. New York (Manhattan with limitations) for immediate shipment.

The range of price given is not "bid and asked," but are prices of different sellers, based on varying grades and/or quantities. Containers named are original packages most commonly sold.

Acetanilid
Barium Sulfate

Chemicals

Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

Fine Chemicals

Outstanding developments in fine chemicals were lacking during the past month. Weakness in cod liver oil due to decreased buying and the nearness of the new catch from which oil is expected within a month, were responsible. Pronounced weakness was also exhibited by C. P. glycerine due to absence of buying and large stocks and low prices for crude. Menthol strengthened slightly. Pure alcohol was lower due to a reduction in the tax effective the first of the year.

Acetanilid — Competition among manufacturers for business in U. S. P. product has been very sharp over the past month. Demand has been of good, but thoroughly routine volume and there is nothing to indicate that the low prices will result in increased consumption.

Acetone — Increased strength has developed in this market and the price has changed for the first time since May 1925 in the form of an advance of one cent per pound. The large excess of acetone that was formerly forced into consumption by reductions in price, are now finding ready outlets largely through intensive development of export markets. Domestic demand has also increased.

Acid Acetylsalicylic — While the consuming demand had been of normal volume during the Fall and fore part of the Winter, the effects of the mild weather conditions prevailing at that time is being felt by manufacturers. However the decline in demand is not of serious nature and is rather spotty in its application. Prices are firm and unchanged in all directions.

Acid Boric — While the tone of this market is steady due to a continued balance between production and consumption, conditions are arising in borax, the raw material from which boric acid is made, that point to lower prices in the future. A new process has been developed for borax production that will lower its price materially and bring it into competition with other chemicals such as caustic soda. The lower prices for borax will doubtless be reflected in boric acid quotations shortly after they are effective for borax.

	Unit	Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Acetanilid, USP, 200 lb bbls	lb.	.....	.28	.28	.28	.36	.22
Acetone, CP, 350 lb drs	wks.	.....	.15	.15	.15	.14	.10½
Acetphenetidin, 225 lb bbls	lb.	.....	1.40	1.40	1.40	1.53	.80
Acids							
Acid, Acetylsalicylic, 225 lb	bbls.	.85	.90	.90	.85	.85	1918
Agaric, 1 oz vials	oz.	.....	3.50	3.50	3.50	3.50	.....
Arsenous, USP, 220 lb bbls	lb.	.....	.18	.18	.18	.19	.09
Benzoic, USP, 100 lb bbls	lb.	.60	.61	.61	.60	.60	.50
Boric, 100 lb kegs	lb.	.11¾	.12	.12	11¾	.11	.07
Cacodylic, 5 lb bot	lb.	.....	8.00	8.00	8.00	8.00	6.00
Camphoric, USP, VIII 1 lb bot	lb.	4.82	4.82	4.82	4.82	5.15	1917
Carbolic, USP, crys 112 lb tins	lb.	.20	.21	.21	.20	.18½	.07½
Chrysophanic, see Chrysarobin							
Cinnamic, 5 lb cans	lb.	3.25	3.50	3.50	3.25	.....	2.20
Citric, USP, crys 230 lb bbl	lb.	.44½	.45	.45	.44½	.44	.53
USP, crys imp. 112 lb keg	lb.	.....	.55	.55	.55	.52	.54
USP, powd 200 lb bbl	lb.	.45½	.46	.46	.45½	.45	.53½
Diethylbarbituric, 1 lb bot	lb.	.....	4.60	4.60	4.60	8.00	23.20
Gallic, USP, 150 lb bbls	lb.	.....	.74	.74	.74	.73	1916
Glycerophosphoric, 25% 1 lb bot	lb.	1.40	1.45	1.45	1.40	1.40	2.00
Hydriodic, USP, 10% 5 lb bot	lb.	....	.80	.80	.80	.70	.70
Hydrobromic, USP, 40% 155 lb cbys wks	lb.	.....	.55	.55	.55	.55	.40
Hypophosphorous, USP, 30% 5 gal demis	lb.	.....	.85	.85	.85	.85	.45
Lactic, USP, VIII 100 lb cbys	lb.	.56	.62	.62	.56	.57	.45
USP, X 100 lb cbys	lb.	.....	.57	.57	.57	.62	.44
Phenylcinchonic	lb.	.....	4.50	4.50	4.50	4.75	.....
Phosphoric USP, Syr 70 lb drs	lb.	.....	.16	.16	.16	.16½	.20½
Pyrogallic, crys 5 lb cans	lb.	1.40	1.50	1.50	1.40	1.37	1.20
Resublimed, 5 lb cans	lb.	1.80	1.85	1.85	1.80	1.72½	1.20
Salicylic, USP, 100 lb bbls	lb.	.40	.41	.41	.40	.40	.22½
Succinic, 100 lb bbls	lb.	.....	1.35	1.35	1.35	1.55½	2.75
Sulfurous, USP, 6% 100 lb cbys	lb.	.05	.06	.06	.05	.05	1918
Tannic, USP, fluffy 50 lb bbls	lb.	.08	.85	.85	.80	.87½	.50
Powd 200 lb bbls	lb.	.90	.93	.93	.90	.78¾	.55
Tartaric, USP, imp 240 lb bbls	lb.	.36½	.37	.37	.36½	.....	.30½
USP, imp 300 lb bbls	lb.	.35¾	.36	.36	.35¾	.....	.30½
Powd, 240 lb bbls	lb.	.36¼	.37	.37	.36¼	.....	.30½
Aconitine, Alk, crys 1 oz vials	oz.	.....	30.00	30.00	30.00	30.00	1918
Amorphous, 1 oz vls	oz.	.....	20.00	20.00	20.00	20.00	1918
Adeps Lanae, hyd 350 lb bbls	lb.	.15	.16	.16	.15	.16	1918
Anhydrous, 350 lb bbls	lb.	.16	.17	.17	.16	.17	1918
Agaricin, 1 oz vls incl	oz.	.....	2.32	2.32	2.32	2.10	.55
Alcohol							
Alcohol, Benzyl, 5 lb bot	lb.	1.45	1.55	1.55	1.45	1.45	.....
Ethyl, USP, 190 pf 50 gal bbls	gal.	2.70½	2.75½	2.75½	2.70½	3.70	2.50
Pure tax free	gal.	.....	2.50	2.50	2.50	2.50	.80
Col. Spirit 50 gal bbl	gal.						
Grain drums	gal.	3.90	4.00	4.00	3.90	3.82½	Nom.
Denatured No. 1 spec. denat. 190 pf 50 gal bbls incl C1	gal.	.....	.55½	.55½	.55½	.....	1918
Isopropyl refd 98-99% drs	gal.	1.25	1.50	1.50	1.25	1.25	.....
Phenylethyl, 1 lb bot	lb.	8.00	10.00	10.00	8.00	8.00	.....
Aloin, USP, 100 lb cases	lb.	.90	.95	.95	.90	.90	.68
Aluminum Acetotartrate kegs	lb.	.....	1.60	1.60	1.60	1.60	1.10
Amidopyrine, 10 lb boxes	lb.	.....	4.75	4.75	4.75	4.64	.....
Imported 10 lb boxes	lb.	4.60	4.90	4.90	4.60	4.60	.....
Ammonium Salts							
Ammonium Acetate 100 lb kegs	lb.	.36	.38	.38	.36	.36	.28
Benzoate, USP, 1 lb bot	lb.	.....	1.27	1.27	1.27	1.27	.90
Borate, 10 lb bot	lb.	.....	.35	.35	.35	.35	.60
Bromide, USP, 450 lb bbls	lb.	.48	.50	.50	.48	.48	.48
Imported, 112 lb boxes	lb.	.48	.50	.50	.48	.50½	.49
Carb., USP, lump 100 lb kegs	lb.	.....	.13½	.13½	.13½	.13½	.08¾
USP, powd 100 lb kegs	lb.	.....	.10½	.10½	.10½	.14½	.09¾
Citrate, 100 lb kegs	lb.	.85	.90	.90	.85	.85	.70
Ichthyolate, as to brand	lb.	4.00	4.50	4.50	4.00	4.85	3.25
Iodide, USP, 25 lb jars	lb.	.....	5.20	5.20	5.20	5.20	3.70
Phosphate, dibasic 250 lb bbls	lb.	.....	.48	.48	.48	.48	.12
Salicylate, USP, 100 lb kegs	lb.	.....	1.15	1.15	1.15	.96½	.40
Valerate, USP, 25 lb jars	lb.	2.75	2.90	2.90	2.75	2.75	1.25
Amylene Hydrate, 1 lb bot	lb.	.....	7.10	7.10	7.10	7.10	5.40
Antipyrine, USP, 100 lb cans	lb.	1.65	1.75	1.75	1.65	1.75	2.00
USP, second hands	lb.	.....	1.65	1.65	1.65	1.65	.....
Apomorphine Hydrochloride, ⅛ oz. vials	oz.	.....	35.80	35.80	35.80	23.80	10.40
Arecoline Hydrobrom, 1 oz vials	oz.	.....	11.45	11.45	11.45	8.37	7.10
Aspirin see Acid Acetylsalicylic							
Aspidospermine Amorphous	oz.	.....	15.00	15.00	15.00	15.00	15.00
Atropine Alk, USP, 1 oz vials	oz.	.....	9.10	9.10	9.10	6.93	7.25
Methyl bromide, 1 oz vials	oz.	.....	25.00	25.00	25.00	25.00	20.00
Sulfate, 5 oz cans	oz.	.....	3.00	3.00	3.00	3.00	6.10
Single ounce	oz.	.....	3.15	3.15	3.15	3.15	6.25
Barium Iodide, 5 lb box	lb.	.....	5.15	5.15	5.15	5.15	4.95
Sulfate, X-ray diagn bbls	lb.	.09½	.10	.10	.09½	.09½	.11

HEYDEN CHEMICAL CORP.

HEYDEN

HEYDEN

ACID ACETYLSALICYLIC

SODIUM SALICYLATE SALICYLIC ACID

METHYL SALICYLATE

FORMALDEHYDE

PARAFORMALDEHYDE METHENAMINE

GLYCEROPHOSPHATES

BENZOATES

BROMIDES SILVER SALTS CREOSOTE

GUAIACOL PREPARATIONS

45 E. 17th Street, New York

180 N. Wacker Drive, Chicago

Chemicals

Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

Acid Carbolic — Prices for this product have remained stable for some time past and there is nothing to indicate any change. Plant capacity is greatly in excess of consumption, but manufacturers apparently realize that lower prices will not stimulate consumption and are taking their shares of current requirements. The increasing number of new phenol plastics are working to clear up part of the over-production, and this is resulting in a firmer attitude on the part of manufacturers.

Acid Citric — Firm but quiet conditions have prevailed in this market during the past month. The continued shortage of argols abroad which has resulted in almost prohibitive import prices and high domestic prices, has resulted in consumers buying only for immediate requirements. High prices are expected to prevail throughout the Winter, and past that time if the coming crop of grapes abroad does not perform much better this year.

Acid Phosphoric — Sellers who were quoting one cent per pound above the general quotation of 16c for U. S. P. syrupy grade, brought their quotations in line with the 16c price during the month. No weakness is apparent but selling competition is sharp. Demand is of moderate proportions.

Acid Salicylic — Manufacturers are well in control of the market for this product and are maintaining production schedules well in line with current requirements of consumers. At this time there is nothing to indicate any variation in prevailing prices.

Acid Tartaric — A slight degree of strength in imported prices was apparent at the start of the year. However, material is plentiful and only active consuming interest will firm the market definitely. It is not anticipated that sufficient orders will make their appearance to cause this condition.

Alcohol — This market has been weak for the past month at least, and is still weak with the opening of the new year. Where business of any size is involved, the schedule is not adhered to. The impression was general during December that the price shading was an effort on the part of manufacturers to reduce their stocks by the end of the year so that they could manufacture the full quota allowed them by Commissioner Doran under the new restricted manufacturing ruling that went into effect Jan. 1. It also was thought that the cutting was an effort on the part of manufacturers to increase the volume of their individual sales during 1927 so that they could successfully apply for an increase in the manufacturing

	Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Bay Rum Porto Rico, 45 gal bbls....gal.	.80	.85	.85	.80	.80	.....
Domestic syn. 50 gal bbl....gal.	.65	.70	.70	.65	.65	.....
St. Thomas, 50 gal bbls....gal.	.80	.85	.85	.80	.81	.....
Benzonaphthol, 5 lb boxes....lb.	2.50	2.60	2.60	2.50	2.50	.89
Benzoyl Chloride, 500 lb dr....lb.	.....	1.00	1.00	1.00	1.00	1.00
Benzyl Benzoate, Medicinal FFC....lb.	.....	1.40	1.40	1.40	1.75	1.25
Chloride Redis, 160 lb cby....lb.	.30	.35	.35	.30	.30	1.50
Formate, 1 lb bot....lb.	3.25	3.50	3.50	3.25	3.25	.....
Succinate, 160 lb cby....lb.	.....	4.25	4.25	4.25	4.63	.....
Bismuth						
Bismuth, metal 100 lb cases....lb.	2.00	2.05	2.05	2.00	2.49	1918
Ammon. Citrate, USP, 5 lb cans....lb.	5.50	5.55	5.55	5.50	5.70	2.50
Betanaphtholate, 5 lb box....lb.	3.30	3.35	3.35	3.30	3.30	2.80
Citrate, USP, 5 lb cans....lb.	2.75	2.80	2.80	2.75	2.81	2.50
Chloride....lb.	3.55	3.60	3.60	3.55	3.55	3.15
Hydroxide....lb.	3.05	3.10	3.10	3.05	3.12	2.70
Nitrate, 25 lb jars....lb.	1.85	1.90	1.90	1.85	1.90	1.45
Oxide anhydrous....lb.	3.55	3.60	3.60	3.55	3.61	3.05
Oxychloride, 25 lb boxes....lb.	3.10	3.15	3.15	3.10	3.20	2.00
Salicylate, 25 lb boxes....lb.	.....	1.80	1.80	1.80	1.92	1.60
Subcarbonate, USP, 25 lb boxes....lb.	.....	2.43	2.43	2.43	2.98	2.10
Subcarbonate, X-ray diag 1 lb bottles....lb.	3.40	3.45	3.45	3.40	3.50	4.09
Subgallate, USP, 25 lb boxes....lb.	2.55	2.60	2.60	2.55	2.61	1.65
Subiodide, 5 lb lots....lb.	4.20	4.25	4.25	4.20	4.31	3.75
Bismuth....						
Subnitrate, USP, 25 lb jar....lb.	2.20	2.25	2.25	2.20	2.30	1.80
Subsalicylate, USP, 25 lb boxes....lb.	.....	2.90	2.90	2.90	3.06	2.05
Tannate....lb.	2.60	2.65	2.65	2.60	2.60	2.00
Borax, crys USP, 400 lb bbls....lb.	.04½	.05	.05	.04½	.04½	.03½
Bromine, N F, 6 lb bot....lb.	.....	.45	.45	.45	.46	.43
Bromoform, USP, 5 lb bot cases....lb.	1.65	1.90	1.90	1.65	1.65	1.05
Brucin Alk., 100 oz tins....lb.	.04	.05	.05	.04	.08	.60
Sulfate, 100 oz tins....lb.	.06	.07	.07	.06	.08	.55
Butylchloral Hydrate bot....lb.	4.00	5.00	5.00	4.00	4.00	2.75
Butyric Ether, absolute 25 lb cans....lb.	1.10	1.20	1.20	1.15	.....	1.15
Cadmium Salts						
Cadmium Bromide, jars 50 lb....lb.	1.15	1.20	1.20	1.10	.....	.85
cases wks....lb.	1.05	1.10	1.10	1.05	1.15	1918
Iodide, 10 lb bot....lb.	.....	4.45	4.45	4.45	4.45	3.50
Metal Sticks, 100 lb. cases....lb.	.65	.75	.75	.65	.67½	.95
Sulfide cases....lb.	1.20	1.25	1.25	1.20	1.20	1.75
Caffeine						
Caffeine Alk, USP, 1....						
100 lb kegs....lb.	3.05	3.20	3.20	3.05	3.14	3.65
Citrated, 50 lb cans....lb.	2.00	2.25	2.25	2.00	2.53	2.60
Hydrobromide, 1 lb bot....lb.	4.65	4.90	4.90	4.65	4.65	1918
Hydrochloride, 1 lb bot....lb.	6.05	6.55	6.55	6.05	6.05	4.25
Sulfate, 1 lb bot....lb.	5.40	5.90	5.90	5.40	5.40	1918
Sodium Benzoate, tins....lb.	.....	3.05	3.05	3.05	3.20	3.15
Salicylate, tins....lb.	.....	2.95	2.95	2.95	3.10	3.15
Calcium Salts						
Calcium Bromide, 100 lb cs....lb.	.....	.60	.60	.60	.60	.58
Carb, USP, 175 lb bbls....lb.	.04½	.06½	.06½	.04½	.06	.06
Glycerophos, 250 lb bbls....lb.	.....	1.40	1.40	1.40	1.40	1.00
Hypophes, USP, 25 lb cans....lb.	.60	.65	.65	.60	.60	1918
Iodide, 5 lb bottles....lb.	.....	4.35	4.35	4.35	4.35	3.60
Lactate, USP, 500 lb bbls....lb.	.45	.50	.50	.45	.52	.38
Lactophosphate Soluble. Crystals tins....lb.	.....	1.20	1.20	1.20	1.20	.78
Powdered tins....lb.	.....	1.00	1.00	1.00	1.00	.78
Insol. powd tins....lb.	.....	.50	.50	.50	.50	.93
Sulfide, USP, 100 lb drs....lb.	.20	.25	.25	.20	.....	.12
Camphor						
Camphor, American Refined 250 lb bbls....lb.	.....	.62	.62	.62	.68	.44½
2½ lb slabs, 100 lb cs....lb.	.....	.64	.64	.64	.71½	.....
1 lb cakes, 100 lb cs....lb.	.....	.66½	.66½	.66½	.73	1918
1 oz tab, 100 lb cs....lb.	.....	.71	.71	.71	.72	1918
Jap. ref. slabs, 100 lb cs....lb.	.58	.60	.60	.58	.64	.44½
Refined powd....lb.	.....	.63	.63	.63	.72	.....
½ oz tab, 100 lb cs....lb.	.....	.70	.70	.70	.74	.....
Liniment, bbls....gal.	2.20	2.30	2.30	2.20	2.25	.....
Monobrom, 100 lb cs....lb.	1.85	1.90	1.90	1.85	1.85	1.00
Caramel, 40 gal bbls....gal.	.....	.63	.63	.63	.63	.....
50 gal bbls....gal.	.....	.63	.63	.63	.63½	.....
Carmine, No. 40, 5 lb boxes....lb.	5.00	5.15	5.15	5.00	5.00	2.75
Casein edible, 100 lb kegs....lb.	.45	.55	.55	.45	.45	1918
Chalk						
Chalk drop, 175 lb bbls....lb.	.....	.03½	.03½	.03½	.03	.04
Precip light, 250 lb csk....lb.	.....	.04½	.04½	.04½	.04½	.04
Heavy 540 lb csks....lb.	.02½	.03½	.03½	.02½	.02½	.03
Bulk....ton	.....	5.00	5.00	5.00	5.00	18.00
English, 7 lb bags....lb.	.....	.08½	.08½	.08½	.08½	.04
Charcoal Animal medicinal jars incl....lb.	.....	.50	.50	.50	.50	.....
Charcoal....						
Wood, powd, 100 lb bbls....lb.	.05½	.06	.06	.05½	.05½	.....
Chloramine, USP, 200 lb bbls....lb.	.....	1.75	1.75	1.75	1.75	.....
Chlorcosane, 5 lb bot....lb.	.55	.65	.65	.55	.55	.....
Chloroform, USP, 50 lb drs....lb.	.28	.30	.30	.28	.30	.19
Chloral Hydrate, USP, 25 lb jars....lb.	.70	.75	.75	.70	.77	.74
100 lb drums....lb.	.65	.70	.70	.65	.....	.32
Cholesterin....lb.	4.00	4.56	4.56	4.00	4.00	6.50
Chromium Sulfate Scales, tins....lb.	.55	.60	.60	.55	.55	.41
Powdered tins....lb.	.60	.65	.65	.60	.30	.46

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ACETYL SALICYLIC ACID (Aspirin)
METHYL SALICYLATE (Oil of Wintergreen Synthetic)
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PHENOL
PHENACETIN (Acetphenetidin)
ACETANILID
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THE CALENDAR CHANGES
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Standards are changed only as improvements are made. More than a quarter century of manufacturing experience has convinced us that only the best is wanted — — it's only the best that we shall continue to produce.
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quota allowed them. But with the new year bringing fresh evidence of shading, this theory does not hold. The resale market for C. D. No. 5 is indicative of the condition prevailing. Retail sellers to automobile owners are still obtaining their supplies well under the market, although the stocks that were supposed to cause this condition have been on the market since last April and were generally supposed to have disappeared. These buyers claim that they are now obtaining supplies from makers. Many of the special formulas are in the same position indicated by conditions prevailing in C. D. No. 5.

The reduction in the Federal tax on 190 proof U. S. P. alcohol became effective Jan. 1, and the price on this grade now stands at $2.70½ @ $2.75½ per gallon in drums.

Bay Rum — Movement is of good volume but supplies of all grades are plentiful. Prime St. Thomas goods are available at unchanged prices of 80c per gallon.

Bismuth Salts — The position of the metal has held steady and therefore the quotations on the salts are unchanged. Demand for salts has been quiet.

Borax — Although the market is steady and prices are virtually unchanged at recent figures, developments are taking place in borax production that point to lower prices some time in the future. A new method of obtaining borax from the mines is expected to reduce the cost of production so that borax will enter into competition with other chemicals such as caustic soda. Such competition will tend to move borax in much larger volume and thus reduce the price still further by virtue of the economies effected by large scale production.

Brucine Alkaloid — Market is dull as has been the case for many months past. Generally sales are being made at 5c per pound, although it is possible to better this price by as much as one cent per pound.

Caffeine — Dullness characterizes this market although movement into consumption is fairly well up to normal. The derivatives have also been dull although manufacturers are holding prices at firm unchanged levels.

Calcium Carbonate — U. S. P. material is obtainable at unchanged prices. Demand has shown a marked increase with the opening of the new year, but prices will not be affected as stocks are sufficient to care for the increased requirements.

Calcium Glycerophosphate — Demand has improved with the colder

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Chrysarobin, 50 lb tins	lb.	3.65	3.75	3.75	3.65	2.40
Cinchonine Alk, 100 oz tins	oz.	.....	.38	.38	.38	.08
Crystal	oz.	.65	.68	.68	.65	.13
Sulfate, 100 oz tins	oz.	.....	.25	.25	.25	.06
Cinchonidin Sulfate, 100 oz tins	oz.	.....	.35	.35	.35	.15
Resale, 100 oz lots	oz.	.32	.33	.33	.32	.....
Cocaine Alk, USP, 1 oz vial	oz.	.....	11.07	11.07	10.65	3.85
Hydrochloride, USP, 1 oz vial, 25 oz lots	oz.	.....	8.50	8.50	.....	2.65
Cocoa Butter, 12 lb boxes	lb.	.....	.50	.50	.50	.35
Codeine						
Codeine Alk, 1 oz vials, 10 lots	oz.	.....	10.87	10.87	9.90	5.75
Hydrobromide	oz.	.....	7.92	7.92	7.92	5.50
Hydrochloride	oz.	.....	9.87	9.87	8.90	5.50
Nitrate, oz vl 10 oz lots	oz.	.....	8.80	8.80	8.80	5.50
Phosp. oz vl, 10 oz lots	oz.	.....	8.42	8.42	7.60	5.25
Salicylate	oz.	.....	7.25	7.25	7.25	5.25
Sulfate, oz vl, 10 oz lots	oz.	.....	8.92	8.92	7.69	5.50
Cod Liver Oil						
Cod liver Oil Nor., 30 gal bbls	bbl.	38.00	40.00	40.00	38.25	17.00
Newfoundland	bbl.	.....	46.00	46.00	45.60	62.50
Colchicino Alk, USP, 1 oz vl	oz.	.....	20.00	20.00	20.00	28.15
Salicylate, 1 oz vls	oz.	.....	35.50	35.50	35.50	20.00
Collodion, USP, 30 lb drs	lb.	.....	.23	.23	.23	.22
600 lb drums	lb.	.....	.22	.22	.22	.27
Flexible drums	lb.	.24	.25	.25	.24	.33
Copper Acetate Normal, CP, jars incl	lb.	.....	.75	.75	.75	.35
Arsenite, tins	lb.	.....	.39	.39	.40	.75
Iodide, 5 lb bot	lb.	.....	5.65	5.65	5.65	4.40
Corn Syrup, 42 deg. 50 gal bbls	100lb.	.....	3.31	3.31	3.31	2.16
Cream Tartar, USP, 300 lb bbls	lb.	.....	.26	.26	.25	.24
Imp. powd. 224 lb bbls	lb.	.....	.27⅜	.27⅜	.25	.24
Creosote, USP, 42 lb cbys	lb.	.40	.42	.42	.40	.51
Carbonate, 150 lb	lb.	1.55	1.60	1.60	1.55	1917
Cresol, USP, 400 lb drums	lb.	.....	.20	.20	.20	.22	.53
500 lb drums	lb.	.....	.20	.20	.20	.21	.07
Diethyl Phthalate, 25 lb cn	lb.	.....	.40	.40	.40	.40	.....
1000 lb drums	lb.	.24	.25	.25	.24	.27	.....
Digitalin						
Digitalin Pure, 1 oz vial	oz.	15.00	15.50	15.50	15.00	10.63	6.25
Dionin, see Morphine Ethyl		.....	2.50	2.50	2.50	2.50	1917
Dover's Powder, USP, 5 lb tin	lb.	.....	30.07	30.07	30.07	30.07	26.00
Duboisine Sulfate, 1 oz vl	oz.	.....	1.65	1.65	1.65	1.65	1918
Emetine Alk, 15 gr vial	oz.	35.00	36.00	36.00	35.00	32.70	45.00
Hydrochloride, USP, 1 oz vl	oz.	.....	.85	.85	.85	.85	1.80
15 grain vials	oz.	2.50	2.70	2.70	2.50	2.50	1.00
Epsom Salts, USP, 200 lb bbls	100 lb.	1.85	1.90	1.90	1.85	1.95	1.00
Imp. 100 lb bbls	100 lb.	.....	10.85	10.85	10.85	7.60	5.50
Ergotin Bonjean, 1 lb jars	lb.	.....	35.00	35.00	35.00	35.00	41.50
Eserine Alk, 1 oz vials	oz.	.....	40.00	40.00	40.00	40.00	25.50
Salicylate, 1 oz vials	oz.	.....	40.00	40.00	40.00	40.00	25.50
Sulfate, USP, VIII 1 oz vials	oz.						
Ether							
Ether, USP, 55 lb drums	lb.	.....	.15	.15	.15	.13½	.16
Anaesthesia, 55 lb drums	lb.	.....	.20	.20	.20	.19	.16
USP, 1880 55 lb drums	lb.	.....	.37	.37	.37	.....	.24
Nitrous, 1 lb bot	lb.	.....	.95	.95	.95	.91	.48
Ethyl Chloride, 200 lb bot	lb.	.24	.25	.25	.24	.24	.....
Ethyl Iodide, 5 lb bot	lb.	.....	6.25	6.25	6.25	6.25	4.75
Formaldehyde, USP							
100 lb cbys 1c-1 wks	lb.	.08¾	.09	.09	.08¾	.11	.09½
Furfural, 500 lb drums	lb.	.....	.17½	.17½	.17½	.17½	.....
Gall Extract	lb.	.20	.21	.21	.20	.20	.....
Gelatin, USP, Silver, 100 lb. cs	lb.	.55	.60	.60	.55	.60	.....
Pure Food, 50 lb bbls	lb.	.53	.55	.55	.53	.55	.....
Sheets	lb.	.....	.....	.....	.....	.53	.....
Glucose, (grape sugar) dry 70° bags c-l NY	100 lb.	3.14	3.24	3.24	3.14	3.14	.....
Glycerin							
Glycerin, CP, 550 lb drums	lb.	.18	.19	.19	.18	.25	.19¾
Goa Powder, see Chrysarobin							
Glycyrrhizin Ammon, tins	lb.	.....	3.00	3.00	3.00	3.00	1.85
Gold Chloride, bottles	oz.	12.00	12.50	12.50	12.00	12.00	10.15
Guaiacol, liq. USP, 100 lb cbys	lb.	1.75	2.25	2.25	1.75	1.75	1.60
Crystals	lb.	2.25	2.50	2.50	2.25	2.25	2.75
Benzoate, 1 lb bottles	lb.	.....	13.00	13.00	13.00	13.00	.....
Carbonate, 5 lb boxes	lb.	.....	2.50	2.50	2.50	2.50	2.55
Haarlem Oil, bot 6 gr cases	gr.	.....	3.25	3.25	3.25	3.25	1.67
Imported, 5 gross cases	gr.	.....	3.50	3.50	3.50	3.50	1.65
Halazone, 5 lb bot	lb.	2.75	3.25	3.25	2.75	2.75	.....
Hexamethylene							
Hexamethylenetetramine, USP, 100 lb drums	lb.	.52	.56	.56	.52	.60	1918
Homatropine Hydrobrom, USP	oz.	.....	14.50	14.50	14.50	14.50	87.00
5 oz and 1 oz vials	oz.	.....	13.50	13.50	13.50	13.50	87.00
Hydrastine Alk, USP, 1 oz vial	oz.	20.50	21.00	21.00	20.50	20.50	21.50
Hydrochlide, USP, 1 oz vials	oz.	20.50	21.00	21.00	20.50	20.50	21.50
Sulfate, 1 oz vial	oz.	22.50	23.00	23.00	22.50	25.07	22.50
Hydrastinine Hydrochloride, USP, 15 gr vials	oz.	.....	40.00	40.00	40.00	40.00	.....
Hydrogen Peroxide, USP, soln 375 lb bbls	lb.	.04	.05	.05	.04	.04	.03½
Hyoscine Hydrobrom, USP, 1 oz vials	oz.	.....	13.57	13.57	13.57	13.57	51.00
5 oz, 1 oz vials	oz.	13.07	13.57	13.57	13.07	13.07	.....
Hyoscyamine Alk, crystals, 1 oz vials	oz.	.....	25.07	25.07	25.07	25.07	14.00
Amorphous, 1 oz vial	oz.	.....	75.07	75.07	75.07	75.07	55.00
Hyoscyamine							
Hydrobromide, USP, 1 oz vial	oz.	.....	35.07	35.07	35.07	35.07	13.00
Sulfate, 1 oz vial	oz.	.....	25.07	25.07	25.07	25.07	13.00
Hypoquinone, 100 lb kegs	lb.	.....	1.25	1.25	1.25	1.25	.53
Ichthyol, tins	lb.	4.00	4.25	4.25	4.00	4.00	1918
Iodide Arsenous, 5 lb bot	lb.	.....	5.20	5.20	5.20	5.20	3.70
Arsenous-Mercuric soln, 5 lb bottles	lb.	.....	.26	.26	.26	.26	.16

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Guaiacol Benzoate
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Veratrine Alkaloid
Codeine Phosphate
Duboisine Sulphate
Pilocarpine Nitrate
Hydrastine Sulphate
Acid Diethylbarbituric
Colchicine Amorphous
Berberine Sulphate Acid
Arecoline Hydrobromine
Veratrine Hydrochloride
Hydrastine Hydrochloride
Berberine Sulphate Neutral
Strychnine Sulphate Crystal
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Creosote Carbonate
Morphine Sulphate
Guaiacol Carbonate
Hydrastine Alkaloid
Cocaine Hydrochloride
Emetine Hydrochloride
Hyoscine Hydrobromide
Berberine Hydrochloride
Yohimbin Hydrochloride
Pilocarpine Hydrochloride
Hyoscymine Hydrobromide
Hydrastinine Hydrochloride
Strychnine Sulphate Powder
Apomorphine Hydrochloride
Hyoscymine Sulphate Crystals
Ethylmorphine Hydrochloride

THE HOFFMANN LAROCHE CHEMICAL WORKS, INC.

17-19-21 CLIFF STREET, NEW YORK, N. Y.

Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

weather, after a rather dull period of slow movement, Manufacturers' quotations are unchanged.

Chloramine — Manufacturing and marketing conditions have shown no change in any direction and prices are steady at unchanged figures of $1.75 per pound.

Chloroform — U. S. P. is still quoted generally at 30c per pound, with sales occurring at 28c per pound in many instances. Manufacturers are in control of the situation and no change from this position is indicated.

Cod Liver Oil — The absence of buying has caused a depression in prices on spot and for shipment. The fact that the new catch is coming along and that our deliveries from this catch are expected in this country within three weeks to a month has also weakened the position somewhat, and may be partly responsible for the slowing down of consuming activity. It is stated that the carry over from the old catch will approximately equal the carry over of last year, and with a favorable catch, weakness in the market would be justified. Spot goods are quite freely offered at $38.00 barrel, with prompt arrival quoted at $35.50 barrel.

The exports of oil from Norway during October, and January to October to the various countries are given in the following table. The figures are in hectoliters, one hectoliter equaling approximately 25 gallons.

Cream of Tartar — With the apparently successful formation of the European price-fixing convention holding up prices for imported material, this market is firm.

Epsom Salts — The movement of this product continues to be of steadily increasing volume. Domestic manufacturers are holding practically all the business in the interior of the country, with importers still offering serious competition along the coast. U. S. P. material is quoted by domestic manufacturers at $2.50 @ $2.70 100 pounds, and by importers at $1.85 @ $1.90 100 pounds.

Formaldehyde — As this market immediately follows the market for methanol, the raw material, prices from manufacturers are steady in all directions. The present price of 8¾c @ 9c per pound is based on 50c per gallon for methanol, which is the current price. Further declines in methanol are likely.

Glycerine — Decided weakness is apparent in this market. Foreign crude glycerine is offered at 8.8c per pound c.i.f. or at 10c at New York, with domestic producers meeting this price when selling. It is understood that a fairly steady accumulation of stocks of crude is taking place at producers' plants in this country,

	Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Iodine, crude, 200 lb kegs....lb.	4.20	4.25	4.25	4.20	4.20	3.30
Resublimed, 10 lb tars....lb.	4.65	4.70	4.70	4.65	4.65	3.55
Tincture demis....gal.	4.55	4.65	4.65	4.55	4.65	.....
Iodoform, powd 10 lb bot....lb.	.....	6.00	6.00	6.00	6.00	4.00
Iron Salts						
Iron & Ammonium Citrate, USP, 50 lb cans....lb.	.64	.66	.66	.64	.67½	.54½
& Ammonium Oxalate, 25 lb box....lb.	.36	.38	.38	.36	.36	.28
& Ammonium Sul, CP, jars incl....lb.	.....	.25	.25	.25	.27	.20
Bromide....lb.	1.10	1.22	1.22	1.10	1.10	.65
Carbonate Mass, (Blaude 100 lb bags)....lb.	.....	.18	.18	.18	.30	.18
Cacodylate, 100 lb bot....lb.	.....	7.50	7.50	7.50	8.00	16.00
Chloride, USP, lump 400 lb bbls....lb.	.05½	.06	.06	.05½	.05½	.06½
Citrate, USP, VIII 25 lb can....lb.	.94	1.01	1.01	.94	.94	.55½
Hypophosphite, 5 lb cans....lb.	1.55	1.65	1.65	1.55	1.55	1.10
Iodide, 1 lb bottles....lb.	.....	4.28	4.28	4.28	4.28	2.40
Nitrate, kegs....lb.	.....	.36	.36	.36	.09	.50
Oxalate, Scales, 25 lb cans....lb.	.....	.65	.65	.65	.88	.....
Phosphate, USP, 50 lb cans....lb.	.....	.69	.69	.69	.69	.54½
& Potas Oxalate, 250 lb bbl....lb.	.....	.49	.49	.49	.49	.26
& Potas Tartarte, tins....lb.	.....	.88	.90	.90	.88	.55
Pyrophosphate, USP, 50 lb....lb.	.74	.80	.80	.74	.74	.54½
& Sod Oxalate, 24 lb box....lb.	.....	.30	.30	30.	.32½	.28
Sulfate, USP, crys bbls....lb.	.04½	.04½	.04	.04½	.04½	.03½
Ferrous dried bbls....lb.	.....	.08	.08	.08	.08	.06
Valerate, tins....lb.	2.75	3.00	3.00	2.75	2.75	1.30
Jalap Resin, USP lumps, 5 lb tins....lb.	.....	4.00	4.00	4.00	4.00	.....
Powdered, tins....lb.	.....	4.65	4.65	4.65	4.65	.....
Lead Acetate, USP, 100 lb kegs....lb.	.15	.18	.18	.15	.15½	.14
Iodide, USP, VIII 5 lb bot....lb.	3.20	3.40	3.40	3.20	3.20	2.50
Lecithin, 5 oz jars....oz.	1.00	1.30	1.30	1.00	1.00	.95
Licorice Ext Mass, cases....lb.	.14	.20	.20	.14½	.14½	1918
Compound powder, bbls....lb.	.11	.13	.13	.11	.11	.16½
Powdered....lb.	.28	.34	.34	.28	.27	.29
Lithium Carbonate, 250 lb bbls....lb.	1.50	1.60	1.60	1.50	1.50	.67
Citrate, USP, 100 lb kegs....lb.	.....	1.70	1.70	1.70	1.70	1918
Iodide, 5 lb. bottles....lb.	.....	5.40	5.40	5.40	5.40	4.10
Lobeline Sulfate, ¼ oz vial....oz.	.....	8.75	8.75	8.75	6.25	.....
Luminal, see Phenylethylmalonylurea.....						
Magnesium Salts						
Magnesium Carbonate, USP, 100 lb bbls....lb.	.....	.12	.12	.12	.12	.05½
English, oz blocks....oz.	.16	.18	.18	.16	.16	.....
Glycerophosphate, 5 lb tins....lb.	3.20	3.25	3.25	3.20	3.20	2.13
Hypophosphite, 5 lb cans....lb.	.....	1.05	1.05	1.05	1.05	1.15
Oxide, USP, light 100 lb bbls....lb.	.....	.42	.42	.42	.42	.22
USP, heavy 250 lb bbls....lb.	.....	.50	.50	.50	.50	.27
Salicylate, 100 lb kegs....lb.	.....	1.10	1.10	1.10	.49	.70
Stearate, bbls....lb.	.23	.25	.25	.23	.23	.....
Manganese Dioxide, precip. 100 lb kegs....lb.	.48	.50	.50	.48	.....	.40
Glycerophosphate, 5 lb tins....lb.	2.90	3.00	3.00	2.90	2.90	1918
Hypophosphite, USP, VIII 5 lb cans....lb.	1.35	1.40	1.40	1.35	1.35	1.10
Iodide, 1 lb bottles....lb.	6.40	6.65	6.65	6.40	6.40	4.35
Sulfate, N. F....lb.	.....	.27	.27	.27	.27	.26
Menthol, USP, 60 lb cases....lb.	4.25	4.50	4.50	4.25	4.30	2.95
Synthetic, cases....lb.	.....	3.25	3.25	3.25	3.37½	.....
Mercury						
Mercury Metal, 75 lb flasks....fl.	126.00	127.00	127.00	126.00	116.67	37.50
Bichloride, crys 25 lb box....lb.	.....	1.81	1.81	1.81	1.58	.55
Gran powd, 100 lb kegs....lb.	.....	1.65	1.65	1.65	1.51	.52
Bisulfate, 25 lb boxes....lb.	.....	1.62	1.62	1.62	1.57½	.42
Blue Mass, 25 lb boxes....lb.	.....	1.03	1.03	1.03	.90	.40
Powd, 25 lb boxes....lb.	.....	1.04	1.04	1.04	.95	.45
Blue Ointment USP, 50%, 25 lb cans....lb.	.....	1.29	1.29	1.29	.87½	.....
Dilute 30%, 25 lb cans....lb.	.....	.92	.92	.92	.86½	.35
33⅓% mercury....lb.	.....	.94	.94	.94	.35	.35
Calomel, 50 lb boxes....lb.	.....	2.05	2.05	2.05	1.88	.60
English....lb.	2.75	2.80	2.80	2.75	1.90	.58
Iodide, green, 25 lb jars....lb.	.....	4.80	4.80	4.80	4.54	2.45
Red, USP, 25 lb jars....lb.	.....	4.89	4.89	4.89	4.61	2.70
Yellow, USP, VIII, 25 lb jars....lb.	4.80	4.80	4.80	4.80	4.50	2.45
Red precip, USP, 25 lb boxes....lb.	2.17	2.17	2.17	2.17	1.92	.75
Powd., USP, 25 lb boxes....lb.	2.17	2.17	2.17	2.17	1.98	.81
White precip, USP, 25 lb boxes....lb.	.....	2.20	2.20	2.20	2.03	.75
Powd., USP, 25 lb boxes....lb.	.....	2.25	2.25	2.25	2.25	.81
Salicylate, 25 lb bot....lb.	.....	2.32	2.32	2.32	2.32	1.50
With chalk, USP, 25 lb boxes....lb.	.....	.93	.93	.93	.87	.39
Methanol (Wood Alcohol), Pure 1c-1 drs....gal.	.....	.60	.60	.60	.....	.....
Methyl Salicylate						
Methyl Salicylate, USP, 50 lb cans....lb.	.....	.42	.42	.42	.45	1918
Methylene Blue, USP, med 5 lb cans....lb.	2.00	2.05	2.05	2.00	1.70	1.00
Milk powd, 150 lb bbls....lb.	.14	.15	.15	.14	.14	.11
Morphine Alk, USP, 5 oz tin....oz.	.....	10.15	10.15	10.15	9.32	1918
Acetate, 5 oz tins....oz.	.....	8.25	8.25	8.25	7.41	5.30
Hydrobromide, 5 oz tins, 10 oz lots....oz.	.....	8.35	8.35	8.35	7.52	5.50
Hydrochloride, 5 oz tins, 10 oz lots....oz.	.....	8.35	8.35	8.35	7.52	5.30
Ethyl Hydrochloride, 5 oz tins, 10 oz lots....oz.	.....	9.85	9.85	9.85	9.00	6.45
Sulfate, 5 oz tins, 10 oz lots....oz.	.....	8.35	8.35	8.35	7.35	4.95
Naphthalene Flake, 175 lb bbls wks....lb.	.04½	.05	.05	.04½	.04½	.02½
Balls, 250 lb bbls wks....lb.	.05½	.06	.06	.05½	.05½	.02½
Oil Mineral White, 50 gal bbls 80-85 vis....gal.	.60	.65	.65	.60	.67	.....
85-90 vis....gal.	.65	.70	.70	.65	.65	.....
125-130 vis....gal.	.70	.80	.80	.70	.71	.....
290 vis....gal.	1.00	1.10	1.10	1.00	.99	.....
Oil Mineral						
Russian 110-115 vis....gal.	.70	.75	.75	.70	.72	.....
150-155 vis....gal.	.67	.77	.77	.67	.76	1918
325-335 vis....gal.	.80	.90	.90	.80	.86	.30

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Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

in fact one moderately sized soap manufacturer is reported to have approximately 400,000 pounds of crude on hand. The Glycerin Research Committee of the Glycerine Producers' Association has recently appropriated money for an additional fellowship at Miner Laboratories to seek new uses and new markets for glycerin. The C. P. product has been nominally quoted at 20c per pound, but it is reported that a few sales to largely buyers have taken place at 16c per pound, and the general run of business is being taken as low as 18c per pound. Factors are of the opinion that the very slow buying is the result of large stocks accumulated a year ago in the bullish market.

Hexamethylenetetramine — The market for U. S. P. remains quiet but generally soft. Only a fair sized routine demand together with none too small stocks, part of which are in weak hands, is the cause.

Hydrastine Alkaloid — A soft condition exists due to material offered in resale quarters at prices fully $1.00 under the manufacturers' quotations.

Hydroquinone — A price-fixing convention has been formed in Europe on this product and prices there have been advanced by from 8d to 9d per pound. The London market is now quoted at 3s 9d to 4s per pound spot. The American market has not been affected, however, and manufacturers see no reason for a variation from $1.25 per pound.

Iodine Tincture — Demand is excellent partly due to the illegitimate use. Prices are given at $4.55 @ $4.65 per gallon as to quantity and seller.

Menthol — Spot prices advanced at the close of the year to a basis of $4.25 @ $4.50 per pound for cases. The large quantity of goods available on spot was imported at prices in line with the new quotation, and for the present the price is expected to hold in this neighborhood. No sharp advances or declines are anticipated as holders are fairly firm and the crop abroad is believed to be large.

Total exports of menthol from Japan during 1924 was 5,997 cases, during 1925 9,350 cases, and during 1926 11,749 cases. Of this the U. S. received 1,311 cases in 1924; 2,317 in 1925; and 3,226 in 1926.

Mercury — The market has declined slightly to $126 @ $127 per flask but is still at high levels. While no sharp reductions are anticipated, it is not believed that the market will advance much above present figures, and over the coming year it should show a material decline. This is due to the fact that increased production planned for the Spanish mine and the increased activity in this country and in Italy as a result of

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Oxgall, Purified, 5 lb bot	lb.	1.75	2.50	2.50	1.75	2.00	1918
USP, 5 lb bot	lb.	2.00	2.50	2.50	2.00	1.75	1.44
Oxyquinoline Sulfate, tins	lb.	8.50	9.25	9.25	8.50	8.50	.....
Pancreatin, USP, 5 lb bot	lb.	.....	2.50	2.50	2.50	2.44	2.97
Paraffin, refd, 200 lb cs slabs 118-120 deg M P	lb.	.08	.09	.09	.08	.08	.....
128-132 deg M P	lb.	.07½	.07¾	.07¾	.07½	.07½	.....
Para-Aldehyde, USP, 100 gal drums	lb.	.67	.77	.77	.67	.67	.38
Paraformaldehyde, USP, 100 lb cases	lb.	.45	.47½	.47½	.45	.50	.40
Pepsin, USP, 5 lb bottles, 1:3000	lb.	.....	2.50	2.50	2.50	2.45	2.50
1:6000	lb.	.....	5.00	5.00	5.00	4.90	5.00
1:10000	lb.	.....	..835	8.35	8.35	8.18	8.25
Peptone, powd, 5 lb bot	lb.					1.71	1.42
Petrolatum							
Petrolatum, Lily White, USP, 400 lb bbls	lb.	.09	.10	.10	.09	.09	.07
Snow White, USP, 300 lb bbl	lb.	.....	.....	.....	.....	.12½	.10
400 lb bbls	lb.	.12½	.13¼	.13¼	.12½	.12	.09½
Phenolphthalein, USP, 100 lb drums	lb.	1.10	1.20	1.20	1.10	1.27	1918
5 lb cans 100 lb lots	lb.	1.23	1.30	1.30	1.23	1.37	1.15
Phenylethylmalonylurea, 1 oz pkg	oz.	.....	5.50	5.50	5.50	5.50	.....
Pilocarpine Hydrochloride, USP, 1 oz vials 25 oz. lots	oz.	.....	3.25	3.25	3.25	3.25	2.45
Nitrate, 25 oz lots	oz.	.....	3.25	3.25	3.25	3.25	2.45
Single ounce	oz.	.....	4.50	4.50	4.50	4.50	2.55
Alkaloid, 15 gr vials	vl.	.....	.75	.75	.75	.75	.50
Piperazine Hydrate, 1 lb bot	lb.	.....	15.00	15.00	15.00	15.00	.....
Piperadine, 25 oz bottles	lb.	.....	8.00	8.00	8.00	8.00	.....
Popodhyllin 5 lb bottles	lb.	.....	4.50	4.50	4.50	4.50	2.82
Second hands	lb.	3.90	4.00	4.00	3.90	3.96	.....
Potassium Salts							
Potassium Acetate, USP, 100 lb kegs	lb.	.29	.30	.30	.29	.29	.16½
Bicarb, USP, crys 320 lb bbls	lb.	.....	.13	.13	.13	.13	.06¾
Bromide, USP, crys 100 lb cs	lb.	.42	.43	.43	.42	.45½	.39
Citrate, USP, 50 lb bbl	lb.	.51	.55	.55	.51	.51	.47
Guaiacol Sulfonate	lb.	1.95	2.25	2.25	1.95	1.81	1.85½
Hypophosphite, 10 lb cans	lb.	.80	.85	.85	.80	.80	.61
Iodide, USP, 100 lb cases	lb.	3.50	3.60	3.60	3.50	3.54	2.95
Lactophosphate, 4 oz bot	lb.	.....	.90	.90	.90	.90	1.25
Permangan, USP, crys, 100 lb drs wks	lb.	.15	.16½	.16½	.15	.15	.09¾
Phosphate dibasic pure, kegs	lb.	.....	.49	.49	.49	.54	.25
Salicylate, 25 lb cans	lb.	.....	1.18	1.18	1.18	.94	.50
Sulfate, USP, VIII, 100 lb kegs	lb.	.....	.15	.15	.15	.15	.05¾
Sulfocyanide, CP 15 lb jars	lb.	.....	.50	.50	.50	.50	.44
Tartrate, CP, tins	lb.	.....	.65	.65	.65	.65	.36
Pyrogallol, USP, see Acid Pyrogallic							
Quinidine Alk, 100 oz tins	oz.	.70	.75	.75	.70	.70	.35
Sulfate, 100 oz tins	oz.	.....	.50	.50	.50	.50	.23
Quinodine, see Chinodin							
Quinine Salts							
Quinine Sulfate, USP, American 100 oz tins	oz.	.....	.50	.50	.50	.50	.26
1 oz tins, 100 oz lots	oz.	.....	.57	.57	.57	.57	.26
Dutch, 100 oz tins	oz.	.....	.50	.50	.50	.50	.....
Java, 100 oz tins	oz.	.....	.40	.40	.40	.40	.25
Japanese 100 oz tins	oz.	.....	.40	.40	.40	.40	.....
Quinine Acetate	oz	.....	.78	.78	.78	.78	.54
Arsenate	oz.	.....	.78	.78	.78	.78	.49
Benzoate	oz.	.....	.78	.78	.78	.78	.....
Bisulfate, USP	oz.	.....	.40	.40	.40	.40	.26
Resale	oz.	.37	.39	.39	.37	.37	.....
Citrate	oz.	.....	.51	.51	.51	.51	.46
Dicarbonate, 1 oz tins	oz.	.....	2.56	2.56	2.56	2.51	.....
Dihydrobromide	oz.	.....	.54	.54	.54	.54	.42
Dihydrochloride, USP	oz.	.....	.54	.54	.54	.54	.48
Ethyl Carbonate, 16 oz tins	oz.	.....	.62	.62	.62	.62	1.15
Ferrocyanide	oz.	.....	.72	.72	.72	.72	.48
Formate	oz.	.....	.73	.73	.73	.73	1.16
Glycerophosphate	oz.	.....	.80	.80	.80	.80	.93
Hydrobromide, USP	oz.	.....	.50	.50	.50	.50	.44
Hydrochlorosulfate	oz.	.....	.54	.54	.54	.54	.54
Hydrochloride & Urea, USP	oz.	.....	.54	.54	.54	.75	.49
Hypophosphite	oz.	.....	.70	.70	.70	.70	.49
Lactate	oz.	.....	.66	.66	.66	.66	.49
Phenolsulfonate	oz.	.....	.78	.78	.78	.78	.37
Phosphate	oz.	.....	.62	.62	.62	.62	.45
Salicylate, USP	oz.	.....	.52	.52	.52	.52	.43
Tannate, USP	oz.	.....	.41	.41	.41	.41	.31
Tartrate	oz.	.....	.78	.78	.78	.78	.44
Valerate	oz.	.....	.78	.78	.78	.78	.49
& Urea Hydrochloride, USP	oz.	.....	.88	.88	.88	.88	.57
Rennet, N. F. 5 lb 1:25,000	lb.	2.95	3.50	3.50	2.95	2.95	.....
Resorcinol							
Resorcinol, USP, 25 lb cans	lb.	1.85	2.00	2.00	1.85	1.85	.80
Rochelle Salt, USP, 225 lb bbl	lb.	.23	.23½	.23½	.23	.22	.17½
Imp, USP, 300 lb bbls	lb.	.....	.23	.23	.23	.21	.18
Rock Sugar, 5 lb boxes	lb.	.....	.15	.15	.15	.....	.....
Saccharin, USP, 10 lb cans	lb.	1.70	1.80	1.80	1.70	1.70	2.25
USP, Soluble, 10 lb cans	lb.	1.75	1.85	1.85	1.75	1.75	2.25
Salicin, USP	lb.	.....	4.86	4.86	4.86	4.42	3.90
Salol, USP, 100 lb drums	lb.	.....	.90	.90	.90	.90	.53
Saltpetre, powd, bbls wks	lb.	.06½	.08¼	.08¼	.06½	.06½	.05½
Santonin, USP, bulk	lb.	141.00	145.00	141.00	145.00	141.00	28.70
Saponin, refined	lb.	1.30	1.50	1.50	1.30	1.26¼	1.25
Scopolamine, see Hyoscine	lb.						

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Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

the high prices prevailing point to an excess production for the present season of about 45,000 flasks. The fact the Spanish society that has bought the output of the Spanish mine has paid a minimum of $101 at the mines will not stop the price from going below even that figure if competitive conditions between Spain and Italy warrant it to move the increased production. The Spanish society has been particularly successful with mercury over the past two years and netted something over $2,500,000. With this in hand they can resist the efforts of Italian factors to secure a large share of the market by lowering the price. Mercury looks statistically weak over the coming year.

Methyl Salicylate — Makers are adhering to the schedule fairly well but resale material still appears below the makers' prices.

Oil Mineral — While the market is steady and consuming demand is about normal, offerings are plentiful and competition is quite keen among sellers. The price schedule has not changed on any of the grades, but large quantity buyers are obtaining concessions.

Petrolatum — The market maintains its strong position due to an increased demand during the past Fall materially reducing the large stocks that have been carried by producers for a long period. An oversold condition with higher prices still appears likely in the near future.

Potassium Iodide — Weakness due to material originating from illegitimate channels as a result of precipitation from tincture of iodine to recover the alcohol, continues to depress this market. This material has been offered during the month as low as $3.05 per pound, against first hand prices of $3.50 per pound.

Potassium Guiacol Sulfonate — While the general price has remained quite firm at $2.00 @ $2.25 per pound, some inside lots were available during the month at $1.85 @ $1.90 per pound.

Quinine Sulfate — General conditions rule unchanged. Exports of quinine from Java during Jan.-Sept. 1927 totaled 12,708 kilos, against 124,039 kilos during Jan.-Sept. 1926. Exports of cinchona bark from Java for the same period of 1927 totalled 4,227,662 kilos, against 4,444,041 kilos for the same period of 1926.

Theobromine Alkaloid — The lower prices recently established have created additional interest. However, lots are offered as low as $1.80 @ $2.00 per pound.

Yohimbin Hydrochloride—Although general quotations remain unchanged at $3.25 @ $3.50 per ounce, material was recently offered in the market as low as $2.75 @ $3.00 per ounce.

	Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Siedlitz Mixture, 250 lb bbl....lb.	.....	.....	.....	.17¾	.14
Silver					
Silver Metal, American....oz.	.....	.57½	.57½	.64	.....
Iodide, 16 oz lots....oz.	.....	.69	.69	.69	.83
Nitrate, 10 oz bottles....oz.	.40¾	.41	.40¾	.41	.35
Nucleinate, 1 oz bottles....oz.	.....	.46	.46	.46	1.10
Bulk....oz.	.....	.37	.37	.37	1.00
Proteinate, 1 oz bottles....oz.	.....	.41	.41	.41	.70
Bulk....oz.	.....	.32	.32	.32	.65
Soap, Castile, 50 lb boxes....lb.	.....	.25	.25	.25	.11½
USP, powd., 250 lb bbls....lb.	.28	.30	.30	.28	.....
USP, green, 450 lb bbls....lb.	.07¼	.07½	.07½	.07¼	.08
Sodium Salts					
Sodium Benzoate, USP, 100 lb bbls....lb.	.50	.55	.55	.50	.23¾
Bromide, USP, 100 lb kegs....lb.	.42	.43	.43	.42	.44 .45
Cacodylate, USP, 25 lb bot....lb.	4.80	6.10	6.10	4.80	4.80 3.75
Citrate, USP, X 50 lb kegs....lb.	.45	.47	.47	.45	.45 .48½
USP VIII, 50 lb kegs....lb.	.38	.40	.40	.38	.38 1918
Glycerophosphate, USP, crys 25 lb cans....lb.	1.40	1.55	1.55	1.40	1.40 1.90
Powder, 25 lb tins....lb.	1.45	1.60	1.60	1.45	1.45 .....
Soln, USP, 25 lb tins....lb.	1.05	1.20	1.20	1.05	1.05 1.10
Hypophosphite, USP, 25 lb cans....lb.	.70	.75	.75	.70	.70 .59
Iodide, USP, 25 lb jars....lb.	4.25	4.30	4.30	4.25	4.25 3.30
Phosphate (Mono-Sodium), 100 lb kegs....lb.	.30	.31	.31	.30	.30 .45
Di-Sodium USP, granular, 275 lb bbls....lb.	.07½	.08	.08	.07½	.07½ .04½
Pyrophosphate, 100 lb kegs....lb.	.....	.29	.29	.29	.26 .27
Salicylate, 100 lb kegs....lb.	.....	.47	.47	.47	.47 .27
Silicate, 41° drums....lb.	.....	.01¼	.01¼	.01¼	.01¼ .01
47° drums....drm.	.....	12.00	12.00	12.00	12.00 .....
Sulfocarbolate, USP, 100 lb kegs....lb.	.....	.31	.31	.31	.31¼ .19
Sulfocyanate, CP crys, jars included....lb.	.....	.60	.60	.60	.60 1.25
Spartein Sulfate, USP, 25 oz bulk....oz.	.65	.70	.70	.60	.65 .33
Single oz vial....oz.	.77	.90	.90	.77	.77 .35
Starch Rice, 140 lb bags....lb.	.09	.10	.10	.09	.09 .07
Strontium Salts					
Strontium Bromide, USP, 50 lb kegs....lb.	.51	.52	.52	.51	.51 .45
Carb, 100 lb kegs wks....lb	.....	.20	.20	.20	.22½ 1918
Iodide, USP, 25 lb jars....lb.	.....	4.00	4.00	4.00	4.00 3.00
Lactate, kegs....lb.	.90	1.10	1.10	.90	1.07 .90
Nitrate, 600 lb bbls NY....lb.	.08	.08½	.08½	.08	.08 .07½
Imp. bbls NY....lb.	.08	.08½	.08½	.08	.08 .07¾
Salicylate, USP, 100 lb keg....lb.	.....	1.10	1.10	1.10	.91 .38
Strophanthin, USP, 1 oz vial....oz.	.....	19.00	19.00	19.00	19.00 9.00
Crystals....lb.	.....	75.00	75.00	75.00	75.00 16.50
Strychnine					
Strychnine Alk, USP crys, 100 oz tins....oz.	.56	.66	.66	.56	.56 .46
Powdered....oz.	.....	.40	.40	.40	.40½ 1917
Japanese cans....oz.	.....	.75	.75	.75	.75 .....
Acetate....oz.	.....	.55	.55	.55	.55 .80
Arsenate, 25 oz cans....oz.	.....	.55	.55	.55	.55 .75
Glycerophosphite, USP....oz.	.....	.55	.55	.55	.55 1.45
Hydrobromide....oz.	.....	.55	.55	.55	.55 .80
Hydrochloride....oz.	.....	.55	.55	.55	.55 .80
Hypophosphite....oz	.....	.65	.65	.65	.65 1.05
Nitrate, USP....oz.	.52	.62	.62	.52	.52 1918
Phosphate....oz.	.....	.55	.55	.55	.55 1918
Saccharine....oz.	.....	1.15	1.15	1.15	1.15 .....
Sulfate, USP crys, powd....oz.	.38	.46	.46	.38	.38 .46
Sugar					
Sugar, refined, 275 lb bbl....100 lb.	5.80	5.90	5.90	5.80	....
Milk, USP, 200 lb bbls....lb.	.18	.20	.20	.18	.18 .12
Sulfonal, see Sulfonmethane....					
Sulfonethylmethane, USP, 10 lb boxes....lb.	3.85	4.05	4.05	3.85	3.85 3.50
Sulonmethane, USP, 10 lb box....lb.	2.65	3.85	3.85	2.65	2.65 2.20
Sulfur flwrs, 100%, 25 lb box....lb.	.....	.10	.10	.10	.10 .....
Washed, USP, 125 lb bbl....lb.	.....	.06	.06	.06	.06 .04½
Iodide, USP, VIII, 5 lb bot....lb.	.....	4.55	4.55	4.55	4.55 3.60
Tapioca Flour, hgh grd bgs....lb.	.05	.05½	.05½	.05	.05 .01
Tartar Emetic, USP, 300 lb bbls....lb.	.34½	.36	.36	.34½	.34¼ .22¾
Terebene, tins....lb.	.....	.85	.85	.85	.85 .50½
Terpin Hydrate, USP, 100 lb kegs....lb.	.45	.47	.47	.45	.45 .24
Terpineol, CP, 1000 lb drs....lb.	.33	.35	.35	.33	.36 Nom.½
50 lb cans....lb.	.37	.38	.38	.37	.40 Nom.
Imported, 25 lb cans....lb.	.34	.37	.37	.34	.40 ....
Terpinyl Acetate, 25 lb can....lb.	1.65	1.85	1.85	1.65	1.65 .....
Theobromine					
Theobromine Alk, 5 lb cans....lb.	1.90	2.25	2.25	1.90	1.95 4.32
Sod. Salicylate, 1 lb bot....lb.	.....	2.10	2.10	2.10	2.40 2.64
Sod. Benzoate, 1 oz vials....oz.	.....	1.00	1.00	1.00	1.00 .....
Thymol, USP, 25 lb tins....lb	.....	2.75	2.75	2.75	2.92 2.20
Iodide kegs....lb.	6.50	7.00	7.00	6.50	6.44 5.70
Veratrine Alkaloid....oz.	.....	2.25	2.25	2.25	2.25 1.45
Sulfate, 1 oz vials....oz.	.....	2.25	2.25	2.25	2.25 1.55
Witch Hazel Ext., 50 gal bbl....gal.	1.05	1.10	1.10	1.05	1.05 1918
Yohimbin Hydrochloride, 1 oz vials....oz.	2.75	3.25	3.25	2.75	3.25 .....
Resale....oz.	2.65	2.70	2.70	2.65	2.65 .....
Zinc Carb, USP, 100 lb keg....lb.	.28	.31	.31	.28	.28 .13½
Chloride, USP, 25 jars ex....lb	.24	.29	.29	.24	.24 .17
Iodide, 5 lb bottles....lb.	.....	5.22	5.22	5.22	5.22 3.45
Oxide, USP, 100 lb bbls....lb.	.17	.18	.18	.17	.14½ .14½
Stearate, USP, 50 lb bbl....lb.	.....	.22	.22	.22	.21½ .30
Sulfate, USP, 100 lb bbl....lb.	.08	.09	.09	.08	.08 .06¾
Sulfocarbolate, 100 lb kegs....lb.	.....	.29	.29	.29	.29½ .19

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Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

Essential Oils

Essential oils were in slight demand during the month. The usual increase in demand was felt with the opening of the new year, but prices were generally soft. Bergamot, wormseed, vertivert and cananga continued their downward movement. Coriander and wormwood moved to new highs, while geranium changed to the strong side of the market. Lemon and orange remain strong.

Oil Anise — While basic conditions are easy due to the more settled conditions in China, the price for U. S. P. oil has not varied from former figures of 54c @ 56c per pound as to seller and quantity.

Oil Bergamot — Weakness continues to characterize this market both on spot and for shipment. The latest price is $4.80 @ $5.05 per pound as to seller and quantity. Reports from Vive Consul Cruger at Messina, Italy, state that the new output of oil is estimated at 700,000 Silician pounds, or almost twice that of 1925, which totaled 400,000 pounds. The report states further that although the appearance of the new oil was not altogether normal, local chemists pronounced it as pure. Total exports amounted to 111,247 kilos net, against 124,179 kilos net exported in 1925.

Oil Birch Tar — More plentiful supplies are arriving and the price has declined to 50c per pound. There is no apparent change in the basic conditions.

Oil Bois de Rose — The prolonged competition between the Cayanne and Brazilian producers holds this market at unchanged low prices. The Cayanne factors state that the Brazilian producers are now cutting wood that is easily accesible, and that until they are forced farther into the wilderness for their wood, the costs of production will be low. The Cayanne factors also state that it is possible to produce bois de rose in Brazil equal to the Cayanne goods, in fact the Cayanne producers have a small concession in Brazil and have produced oil there.

Oil Camphor — The tight situation in white camphor oil has been relieved as was generally predicted when it arose. Shipments have arrived and offerings are available at 12½c per pound for drums, and 15c per pound for tins. The rise was merely a temporary shortage due to the fact that demand ran slightly ahead of arrivals. There has been no chance in the basic situation, and none is anticipated.

Oil Cananga — The competition that has existed among producers in the primary market in Java continues. The fact these producers, who formerly acted as a unit on prices, have disagreed, is totally

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Natural Derivatives						
Anethol, 2 lb bot	lb.	.....	1.30	1.30	1.30	.....
Borneol, 1 lb bot	lb.	2.50	2.60	2.60	2.50	1.50
Carvol, 5 lb bot	lb.	.....	3.85	3.85	3.85	6.00	.....
Citral, 25 lb cans	lb.	.....	2.75	2.75	2.75	2.75	3.50
Citronellal, 1 lb bot	lb	3.00	3.25	3.25	3.00	3.00	2.50
Eucalyptol, USP, 50 lb cans	lb.	1.00	1.05	1.05	1.00	.90	.55
Eugenol, USP, 25 lb cans	lb.	2.75	2.90	2.90	2.75	2.75	2.00
Geraniol, domestic, 50 lb cases	lb.	2.50	2.70	2.70	2.50	2.65	4.25
Imported, 5 lb bot	lb.	2.90	3.10	3.10	2.90	3.03	4.25
Iso-Eugenol, 1 lb bot	lb.	4.25	4.50	4.50	4.25	4.25	3.25
Imported, 1 lb bot	lb.	3.70	3.80	3.80	3.70	3.82	3.25
Linalol from Bois de Rose, 5 lb bot	lb.	3.00	3.15	3.15	3.00	3.34	5.25
Menthol, 60 lb cases	lb.	4.25	4.50	4.50	4.25	4.05	3.60
less cases, 5 lb cans	lb.	....	4.85	4.85	4.85	4.95	4.50
Rhodinol, 1 lb bot	lb.	6.00	6.25	6.25	6.00	9.50	....
Saffrol, drums	lb.	.....	.27	.27	.27	.28½	.30
60 lb cans	lb.	.....	.29	.29	.29	.30½	.31
Thymol, USP, 25 lb tins	lb.	.....	2.75	2.75	2.75	3.50	2.05
Synthetic Aromatics						
Acetophenene, CP, 1 lb bot	lb.	3.50	3.75	3.75	3.50	3.50	.....
Aldehyde, C 8 (Otcyl), 1 lb bot	lb.	.....	55.00	55.00	55.00	.....	.....
C 7, 1 lb bot	lb.	4.50	5.50	5.50	4.50	4.50	.....
C 9 (Nomyl), 1 lb bot	lb.	.....	140.00	140.00	140.00	87.50	.....
C 10 (Decyl), 1 lb bot	lb.	.....	48.00	48.00	48.00	49.50	.....
C 14, 1 lb bot	lb.	22.50	25.00	25.00	22.50	22.50	.....
C 16, 1 lb bot	lb.	70.00	80.00	80.00	70.00	70.00	.....
Aubepine, see Anisic Aldehyde							
Amyl Acetate							
Amyl Acetate, pure, 5 gal cans	gal.	4.75	5.50	5.50	4.75	4.75	5.00
Butyrate, 1 lb bot	lb.	.....	1.90	1.90	1.90	1.96	7.00
Butyrate, 5 lb bot	lb.	.....	1.75	1.75	1.75	1.75	.....
Cinnamate, 5 lb bot	lb.	9.50	9.75	9.75	9.50	5.00	.....
Formate, 1 lb bot	lb.	.....	1.90	1.90	1.90	2.00	.....
Formate, 5 lb bot	lb.	.....	1.75	1.75	1.75	1.75	.....
Phenyl Acetate, 1 lb bot	lb.	4.50	5.00	5.00	4.50	4.50	.....
Salicylate, 100 lb cbys	lb.	1.25	1.30	1.30	1.25	1.25	1.50
Imported	lb.	2.25	2.50	2.50	2.25	2.25	.....
Anisic Aldehyde, 1 lb bot	lb.	3.00	3.25	3.25	3.00	3.00	2.50
Benzaldehyde, USP, 40 lb cbys,	lb.	.....	.....	.....	.....	1.25	1918
50 lb cbys	lb.	1.25	1.35	1.35	1.25	1.25	1918
FFC, 40 lb cbys	lb.	1.35	1.45	1.45	1.35	1.86	1918
Benzoic Ether, see Ethyl Benzoate							
Benzophenone, 1 lb bot	lb.	4.50	5.00	5.00	4.50	4.50	.....
Benzyl Acetate							
Benzyl Acetate, 100 lb cbys	lb.	.90	1.10	1.10	.90	.97	.70
Alcohol, 5 lb bot	lb.	1.25	1.35	1.35	1.25	1.25	1.25
Benzoate, 5 lb bot	lb.	1.25	1.35	1.35	1.25	1.25	.75
Benzyl Benzoate		1.35	1.40	1.40	1.35	1.45	.....
Medicinal, FFC	lb.	4.00	4.50	4.50	4.00	4.00	.....
Buytrate, CP, 1 lb bot	lb.	9.25	9.50	9.50	9.25	9.50	.....
Cinnamate, 1 lb bot	lb.	3.00	3.25	3.25	3.00	3.00	.....
Formate, 1 lb bot	lb.	3.50	3.75	3.75	3.50	3.95	.....
Propionate, 1 lb bot	lb.	5.25	5.50	5.50	5.25	5.50	.....
Succinate, 1 lb bot	lb.	7.50	8.00	8.00	7.50	7.50	.....
Valerate, 5 lb bot	lb.	3.00	3.25	3.25	3.00	3.25	1.75
Bornyl Acetate, 1 lb bot	lb.	4.75	5.00	5.00	4.75	5.00	.....
Bromstyrol, 25 lb cases	lb.	.....	16.00	16.00	16.00	16.00	.....
Butyl Anthranilate dom, 1 lb bot	lb.					16.00	.....
Butyric Ether, see Ethyl Butyrate							
Cinnamic Acid							
Cinnamic Acid, 5 lb cans	lb.	3.25	3.50	3.50	3.25	3.25	.....
Alcohol liquid, 1 lb bot	lb.	3.25	3.50	3.50	3.25	3.55	5.00
Crystallizable	lb.	7.00	8.00	8.00	7.00	7.00	8.00
Aldehyde	lb.	2.25	2.50	2.50	2.25	2.71	1.60
Imported, 1 lb bot	lb.	7.75	9.00	9.00	7.75	7.75	.....
Citronelyl Acetate, 1 lb bot	lb.	8.75	9.00	9.00	8.75	11.25	.....
Coumarin, 25 lb cans	lb.	3.50	4.00	4.00	3.50	3.60	3.25
Decyl Alcohol	lb.	25.00	28.00	28.00	25.00	28.00	.....
Diethyl Phthlate see Chemicals							
Diphenyloxide, 25 lb tins	lb.	1.00	1.15	1.15	1.00	1.15	.....
Ethyl Acetate							
Ethyl Acetate, pure, 5 lb bot	lb	.45	.50	.50	.45	.45	3.75
Benzoate, 5 lb bot	lb.	1.50	1.75	1.75	1.50	1.75	3.00
Ethyl Butyrate, 5 lb bot	lb.	1.80	2.00	2.00	1.80	2.00	10.50
Caproate, 1 lb bot	lb.	3.25	3.50	3.50	3.25	3.25	.....
Cinnamate, 1 lb bot	lb.	4.00	4.50	4.50	4.00	4.00	.....
Formate, 5 lb bot	lb.	1.00	1.25	1.25	1.00	1.00	12.00
Diphenyl Methane	lb	1.50	1.75	1.75	1.50	1.75	.....
Duodecyl Alcohol	lb.	20.00	22.00	22.00	20.00	22.00	.....
Ethyl							
Methyl Paracresol, 1 lb bot	lb.	3.25	3.50	3.50	3.25	3.25	.....
Phenyl Acetate, 5 lb bot	lb.	3.75	4.00	4.00	3.75	3.75	.....
Valerate, 5 lb bot	lb.	.....	3.75	3.75	3.75	3.75	.....
Salicylate, 5 lb bot	lb.	2.00	2.10	2.10	2.00	2.00	3.50
Formic Ether see Ethyl Formate							

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Aromatic Chemicals

Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

responsible for the continued weakness of the market. New low prices are now in effect and spot goods are freely offered at $3.00 @ $3.25 per pound for native oil, and $3.50 @ $4.00 per pound for redistilled oil.

Oil Cassia — The more settled conditions in China continue to react on this market. Shipment prices are easier and consequently the spot market has declined to $1.30 @ $1.40 per pound for drums of 80-85 per cent. oil. The U. S. P. oil is also easier being openly offered at $1.70 @ $1.80 per pound.

Oil Citronella — Although reports have been current of marked strength in both the Java and Ceylon oils, some factors boosting the price on Java oil up to 46c per pound, and on Ceylon oil to 34c per pound, these reports have been unfounded. The market generally may be characterized as somewhat more steady, but prices have not varied.

Oil Cloves — The position of this oil due to the weak condition of the spice. There is very little information available as to the supply of cloves, and naturally buyers distrust quoted prices. Prices on the oil will probably not vary much until a definite change is recorded in the market for the spice.

Oil Coriander — Low priced spot goods have passed into consumption and nothing is available under $10.50 @ $12.00 per pound. Still higher prices appear likely as their exists a world shortage in the seed, and the Russian seed from which the oil is produced, is in very short supply.

Oil Eucalyptus — Reports of real strength continue to be reported by factors here. This strength is the result of heavy buying from Australia by Germany and England.

Oil Geranium — The spot market is decidedly firmer and some factors claim that the situation has definitely changed and a generally firmer market may be expected in the future. The report is circulated that a large consumer who for some time has held direct connections on Bourbon oil, and who not bought for his own consumption but also sold large quantities of good quality oil, has left the market. This means that this consumer's direct connection has been broken, and inasmuch as he has always been a disturbing factor to other importers, the market is expected to firm on his elimination. Some factors are loath to give this story credence as it has been reported many times before without foundation. Even though the report is true, factors do not anticipate a rapidly rising market, and in fact look for decided easiness for

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Geranyl Acetate						
Geranyl Acetate, 1 lb bot	lb.	3.90	4.05	4.05	3.90	4.04	6.00
Butyrate, 1 lb bot	lb.	13.00	13.50	13.50	13.00	13.00	.....
Formate, 1 lb bot	lb.	12.00	12.50	12.50	12.00	12.00	.....
Glyco Ester	lb.	.90	1.00	1.00	.90	1.00	.....
Heliotropin, 100-10 lbs	lb.	1.65	1.75	1.75	1.65	1.65	1.30
Imported	lb.	1.95	2.05	2.05	1.95	2.00	1.30
Hydroxycitronellal, 1 lb bot	lb.	5.50	7.50	7.50	5.50	7.33	.....
Indol, CP, 1 oz bot	lb.	4.25	4.50	4.50	4.25	3.75	.....
Ionone						
Ionone, 1 lb bot 100%	lb.	6.00	7.00	7.00	6.00	6.75	.....
Alpha	lb.	4.75	6.25	6.25	4.75	7.50	.....
Beta	lb.	5.50	7.25	7.25	5.50	8.00	.....
Methyl	lb.	5.75	7.25	7.25	5.75	7.25	.....
Iso Borneol	lb.	2.15	2.25	2.25	2.15	2.25	.....
Iso Bornyl Acetate	lb.	2.80	3.00	3.00	2.80	3.00	.....
Iso-Butyl Benzoate, 5 lb bot	lb.	2.75	3.00	3.00	2.75	2.75	.....
Iso-Safrol, 1 lb bot imp	lb.	1.65	1.75	1.75	1.65	1.94	.....
Domestic, 5 lb bot	lb.	3.50	3.75	3.75	2.50	3.50	.....
Lynalyl Acetate, 1 lb bot	lb.	3.25	4.50	4.50	3.25	7.75	.....
Benzoate, 1 lb bot	lb.	13.00	14.00	14.00	13.00	13.00	.....
Formate, 5 lb bot	lb.	10.50	12.00	12.00	10.50	10.50	.....
Methyl Acetophenone						
Methyl Acetophenone	lb.	3.65	3.75	3.75	3.65	3.70	.....
Anthranilate, 1 lb bot	lb.	2.40	2.45	2.45	2.40	2.51	4.50
Imported	lb.	2.70	2.75	2.75	2.70	2.76	4.50
Anthranilic Acid	lb.	11.75	12.00	12.00	11.75	12.00	.....
Benzoate, 5 lb bot imp	lb.	1.90	2.00	2.00	1.90	2.00	.....
Domestic, 5 lb bot	lb.	1.75	2.00	2.00	1.75	1.75	.....
Cinnamate, 1 lb bot	lb.	3.75	4.25	4.25	3.75	3.75	3.50
Heptenone, 1 lb bot	lb.	8.50	9.00	9.00	8.50	8.50	.....
Paracresol, 1 lb bot	lb.	4.50	8.00	8.00	4.50	5.67	.....
Phenylacetate, 5 lb bot	lb.	3.75	4.00	4.00	3.75	3.75	.....
Salicylate, USP, 500 lb dr	lb.	.....	.40	.40	.40	.43	.45
50 lb cases	lb.	.....	.42	.42	.42	.45	.47
Mirbane, rect, 1000 lb drs	lb.	.12	.13	.13	.12	.13	.06½
Musk Ambrette						
Musk Ambrette 1 lb cans	lb.	6.50	6.75	6.75	6.50	6.80	12.00
Ketone 1 lb cans	lb.	8.00	8.15	8.15	8.00	8.18	.....
Xylene 5 lb cans	lb.	2.25	2.35	2.35	2.25	2.39	.....
Nerolin 1 lb cans	lb.	1.40	1.50	1.50	1.40	1.48	2.00
Octyl Alcohol 1 lb bot	lb.	30.00	32.00	32.00	30.00	32.00	.....
Oenanthic Ether 1 lb bot	lb.	1.90	2.00	2.00	1.90	2.25	.....
Paracresol Methyl Ether	lb.	6.50	6.75	6.75	6.50	7.31	.....
Paracresyl Acetate	lb.	5.50	5.75	5.75	5.50	5.50	.....
Para Cymene Refd 110 gal dr	gal.	2.25	2.50	2.50	2.25	2.25	.....
Phenylacetaldehyde						
Phenylacetaldehyde 50% 1 lb bot	lb.	7.00	7.50	7.50	7.00	8.00	6.50
Imported 50%	lb.	6.25	6.50	6.50	6.25	7.00	6.50
100%	lb.	8.00	8.25	8.25	8.00	8.67	.....
Phenylacetic Acid 1 lb bot	lb.	3.00	3.25	3.25	3.00	3.00	.....
Phenyl Diacetate 1 oz bot	oz.	3.00	3.25	3.25	3.00	3.25	.....
1 lb bot	lb.	8.00	10.00	10.00	8.00	8.00	.....
Imported	lb.	7.00	7.75	7.75	7.00	7.00	.....
Phenylethyl Alcohol 1 lb bot	lb.	4.50	4.75	4.75	4.50	5.20	16.00
Phenyl Ethyl Acetate	lb.	8.25	8.75	8.75	8.25	10.00	.....
Butyrate 1 lb bot	lb.	15.00	16.00	16.00	15.00	16.00	.....
Formate, 1 lb bot	lb.	19.00	21.00	21.00	19.00	19.00	.....
Propionate, 1 lb bot	lb.	16.00	18.00	18.00	16.00	18.00	.....
Valerate, 1 lb bot	lb.	19.00	20.00	20.00	19.00	20.00	.....
Phenylpropylalcohol, 1 lb bot	lb.	15.00	16.00	16.00	15.00	15.00	.....
Skatol, 1 oz bot	lb.	4.50	7.00	7.00	4.50	4.50	.....
Terpinyl Acetate, 25 lb cans	lb.	.75	.80	.80	.75	1.05	1.25
Imported, 25 lb cans	lb.	.85	.90	.90	.85	1.25	1.25
Terpineol						
Terpineol, CP, 1000 lb drs	lb.	.33	.35	.35	.33	.35	.40
50 lb cans	lb.	.37	.39	.39	.37	.38	.45
Absolute, 25 lb cans	lb.	.48	.50	.50	.48	.49	.....
Imported, 25 lb cans	lb.	.58	.60	.60	.58	.39	.....
Vanillin, USP, 25 lb tins	lb.	.....	7.50	7.50	7.50	7.75	5.12
1 lb cans	lb.	.....	7.70	7.70	7.70	8.07½	5.50
Second Hands	lb.	.....	6.75	6.75	6.75	.45	.....
Valerianic Ether see Ethyl Valerate							
Yara Yara, 1 lb cans	lb.	1.50	1.60	1.60	1.50	1.50	.....

Essential Oils

Almond Bitter, USP, 5 lb bot	lb.	2.70	2.80	2.80	2.70	2.72½	3.50
Bitter, ff PA, 5 lb bot	lb.	3.00	3.25	3.25	3.00	3.00	3.35
Sweet, 56 lb cans	lb.	.76	.78	.78	.76	.80	.80
Amber crude, 25 lb tins	lb.	.33	.35	.35	.33	.39	.12
Rectified, 25 lb tins	lb.	.52	.55	.55	.52	.55	.32
Angelica Root, 1 lb bot	lb.	16.00	18.00	18.00	16.00	19.50	26.00
Anise Tech, 66 lb cases	lb.	.54	.56	.56	.54	.57	1.60
USP, 60 lb cans	lb.	.58	.60	.60	.58	.59	1.70
Apricot Kernel, 50 lb cans	lb.	.48	.50	.50	.48	.59	.30
Bay, 25 lb tins	lb.	1.90	2.00	2.00	1.90	1.95	2.40
Terpeneless	lb.	5.80	6.00	6.00	5.80	6.00	6.50
Bergamot							
Bergamot, 25 lb coppers	lb.	4.85	5.10	5.10	4.85	5.91	5.10
Terpeneless	lb.	14.00	18.00	18.00	14.00	11.00	7.50
Artificial, 25 lb cans	lb.	2.50	3.25	3.25	2.50	2.50	3.10

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Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

a month, after which a gradual rise will be effected. Present prices for spot African and Bourbon oils are given at $3.00 @ $3.25 per pound, while Turkish is easier at $2.45 @ $2.55 per pound. There is a real short crop in African oil.

Oil Hemlock — Easiness characterizes this oil on spot and prices are named slightly lower at $1.05 @ $1.10 per pound as to quantity.

Oil Juniper Berries — Slightly lower prices of $2.40 @ $2.75 per pound are quoted by leading sellers for the U. S. P. product. Demand is only fair and supplies on spot are quite plentiful.

Oil Lemon — The situation on spot has firmed up considerably and prices now stand at a minimum of $2.30 per pound, with other prices ranging up to $2.55. Factors here state that the market is in strong position, and this fact is apparently bared out by the report to the Department of Commerce from its representative there which reads as follows: "The statistics of exports of citrus oils from the Messina district for 1926 indicate that there was a marked reduction as compared with the figures for 1925; whereas in 1925 there were exported 803,207 kilos net; the total for 1926 is 744,150 kilos net or 59.057 kilos less.

"It is not an easy matter to analyze the causes of this diminished exportation since various factors contributed to bring it about, but the principal cause was the high price level maintained throughout the year for all the essential oils as the depreciation of the lira tended to restrict sales.

Oil Limes — This market apparently reached the bottom of the present movement some time ago and has not declined further.

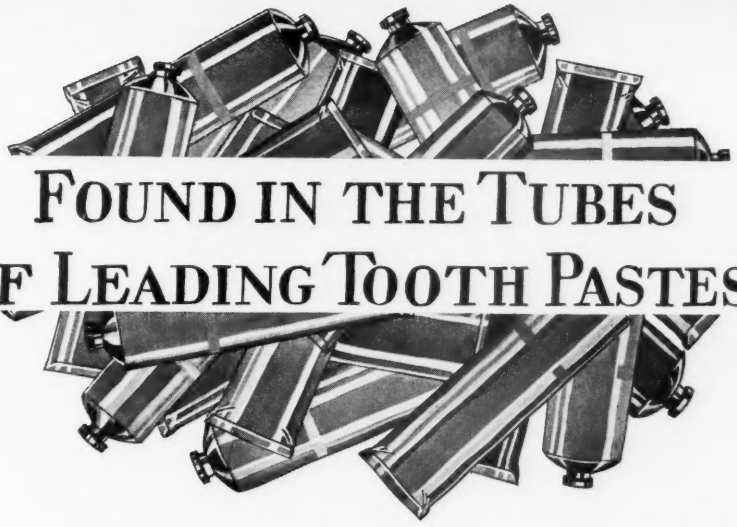
Oil Mace — A sharp reduction occurred in this oil during the latter part of the month and factors now openly quote $1.60 per pound in tins. The lower prices of the raw material are being reflected in present quotations.

Oil Mamdarin — Spot prices remain at $7.50 @ $8.00 per pound. The producing season is practically over in Messina, Italy, and it is understood that fairly large stocks exist there. With the general world demand poor, this market has never shown any real firmness and goods are rather reasonable in price for shipment.

Oil Nutmeg — Lower prices of $1.60 per pound are openly named by factors. This price is a reflection of the lower market for the raw material.

Oil Orange — This market is very firm on spot, and in fact the general situation has been very firm for some time past. While prices have not advanced

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Birch Tar, rect, 5 lb bot	lb.	.50	.55	.55	.50	.56	.55
Crude, 50 lb tins	lb.	.12	.14	.14	.12	.13	.10
Bois de Rose, tins							
Brazillian	lb.	1.80	2.00	2.00	1.80	.....	.....
Cayenne, tins	lb.	2.05	2.25	2.25	2.05	2.23	4.00
Cade, 25 lb cans	lb.	.25	.27	.27	.25	.26½	.16
Cajuput, native, 50 lb tins	lb.	.70	.75	.75	.70	.75	.57½
Calamus, 5 lb bot	lb.	3.40	3.50	3.50	3.40	3.77	2.50
Camphor Sassa, 1000 lb drs	lb.	.14½	.15½	.15½	.14½	.15	.15
Wh te, 400 lb drs	lb.	.12	.12½	.12½	.12	.12	.12
Cans, 50 lbs	lb.	.14½	.15	.15	.14½	.13	.13
Cananga							
Cananga, Native, 25 lb tins	lb.	3.00	3.25	3.25	3.00	4.75	2.80
Rectified, 25 lb tins	lb.	3.50	4.00	4.00	3.50	5.50	4.40
Caraway, USP	lb.	1.65	1.75	1.75	1.65	1.71	1.90
Cardamon, N F, 1 lb bot	lb.	25.00	38.00	38.00	25.00	26.59	28.00
Cascarilla, USP, 1 lb bot	lb.	50.00	64.00	64.00	50.00	50.00	18.00
Cassia, 80-85%, 400 lb drs	lb.	1.30	1.40	1.40	1.30	1.67	1.10
Redist, USP, 50 lb cans	lb.	1.70	1.80	1.80	1.70	1.96	1.30
Cedar Leaf, 50 lb tins	lb.	.90	1.05	1.05	.90	1.05	.60
Cedar Wood, light, 1000 lb drs	lb.	.24	.25	.25	.24	.32	.14
Celery, 1 lb bot	lb.	7.25	7.50	7.50	7.25	8.67	10.50
Chaulmoogra, 80 lb cases	lb.	.....	1.20	1.20	1.20	1.03½	.....
Cinnamon Ceylon, 1 lb bot	lb.	9.75	10.00	10.00	9.75	10.17	6.50
Leaf, 5 lb bot	lb.	1.60	1.75	1.75	1.60	1.60	.....
Citronella							
Citronella Ceylon, 1000 lb drs	lb.	.33	.35	.35	.33	.34	.48
50 lb tins	lb.	.35	.37	.37	.35	.38	.49
Java, 400 lb drs	lb.	.40	.43	.43	.40	.45	1.30
50 lb tins	lb.	.44	.46	.46	.44	.48	1.35
Cloves, USP, 50 lb cans	lb.	1.25	1.40	1.40	1.25	1.45	1.00
6 lb bot	lb.	1.35	1.50	1.50	1.35	1.52	1.05
Copaiba	lb.	.70	.80	.80	.70	.87	1.00
Coriander, USP, 10 lb bots	lb.	10.50	12.00	12.00	10.50	6.39	5.50
Croton, USP, 25 lb tins	lb.	.90	.95	.95	.90	.90	.90
Cubebs, USP, 5 lb bot	lb.	3.35	3.45	3.45	3.35	4.12½	2.90
Cumin, 1 lb bot	lb.	.....	3.75	3.75	3.75	7.00	4.25
Dill, 25 lb cans	lb.	4.00	4.25	4.25	4.00	4.00	4.50
Erigeron, 20 lb tins	lb.	2.40	2.50	2.50	2.40	3.42	1.30
Eucalyptus							
Eucalyptus Austl, USP, 56 lb cans	lb.	.59	.60	.60	.59	.57	.45
500 lb drs	lb.	.58	.59	.59	.58	.54½	.43
Fannel, USP, 25 lb tins	lb.	.80	.85	.85	.80	.80	1.90
Geranium African, 25 lb tins	lb.	3.00	3.25	3.25	3.00	2.93	4.75
Bourbon, 28 lb tins	lb.	3.00	3.25	3.25	3.00	2.92	3.65
Turkish, 28 lb tins	lb.	2.45	2.55	2.55	2.45	2.67	3.50
Ginger, 1 lb bot	lb.	4.80	5.00	5.00	4.80	5.50	4.25
Gingergrass, 28 lb tins	lb.	2.50	2.70	2.70	2.50	2.50	1.75
Hemlock, 25 lb tins	lb.	1.00	1.10	1.10	1.00	1.04½	.50
Juniper Berries, USP, 25 lb tins	lb.	2.40	3.75	3.75	2.40	2.59	.85
Wood, 50 lb tins	lb.	.50	.60	.60	.50	.50	.23
Lavender							
Lavender, USP, 28 lb tins	lb.	3.00	3.40	3.40	3.00	3.75	3.75
Spike Spanish, 50 lb cans	lb.	.95	1.05	1.05	.95	1.10	.90
Lemon Ital, 25 lb cans	lb.	2.30	2.55	2.55	2.30	2.33	2.10
Califonia 35 lb cbys	lb.	1.85	1.95	1.95	1.85	.....	.....
Lemongrass, native, 50 lb cans	lb.	.90	.95	.95	.90	.92	1.05
Limes, expressed, 25 lb tins	lb.	9.25	9.50	9.50	9.25	9.37	3.25
Distilled, 25 lb tins	lb.	6.25	6.75	6.75	6.25	6.79	.75
Linaloe Mex, 70 lb cases	lb.	1.90	2.00	2.00	1.90	2.04½	3.75
Mace, distilled, 50 lb tins	lb.	1.60	1.75	1.75	1.60	1.77½	.70
Mandarin, 25 lb cases	lb.	7.50	8.00	8.00	7.50	8.60	10.00
Mirbane, ref Aromatic Chemicals							
Mustard							
Mustard, USP, 1 lb bots	lb.	9.50	10.00	10.00	9.50	10.00	3.50
Artif, USP, 5 lb bot	lb.	1.90	2.00	2.00	1.90	1.98	1.25
Neroli Bigarade, ¼ & ½ & 1 lb bot	lb.	75.00	140.00	140.00	75.00	75.00	40.00
Petale, 1 lb bot	lb.	160.00	170.00	170.00	160.00	119.17	51.00
Artificial, 1 lb bot	lb.	5.00	15.00	15.00	5.00	7.50	.....
Nutmeg, USP, 50 lb tins	lb	1.60	1.70	1.70	1.60	1.70	.70
Orange							
Orange bitter, 25 lb tins	lb.	2.70	2.80	2.80	2.70	2.72½	4.35
Sweet W Ind., 25 lb tins	lb.	2.60	2.70	2.70	2.60	2.61	2.05
Italian, 25 lb cop	lb.	2.80	3.25	3.25	2.80	2.72	2.15
American, 25 lb tins	lb.	.....	.....	.....	.....	3.03	.....
Distilled, 25 lb tins	lb.	2.20	2.25	2.25	2.20	2.15	.....
Spanish, 25 lb tins	lb.	3.15	3.20	3.20	3.15	2.94	.....
Oil Orris, concrete	lb.	2.50	3.25	3.25	2.50	3.25	.....
Origanum 50 lb cans tech	lb.	.28	.30	.30	.28	.28	.17
Parsley, 1 lb bot	lb.	6.50	6.75	6.75	6.50	6.50	8.00
Patchouli, 5 lb bot	lb.	8.50	13.00	13.00	8.50	9.04	4.00
Pennyroyal, dom, 25 lb tins	lb.	1.80	1.90	1.90	1.80	1.99	1.75
Imported, 25 lb tins	lb.	1.50	1.55	1.55	1.50	1.73	1.05
Peppermint, nat, 60 lb cases	lb.	3.20	3.30	3.30	3.20	3.44	3.80
Redis, USP, 60 lb cs	lb.	3.45	3.55	3.55	.345	3.96	4.60
Petit Grain S A., 25 lb tins	lb.	1.60	1.70	1.70	1.60	1.64	3.25
French, 1 lb bot	lb.	6.25	6.50	6.50	6.25	6.50	4.75
Italian, 25 lb tins	lb.	2.20	2.30	2.30	2.20	2.20	3.85
Pimento, 25 lb tins	lb.	2.85	2.95	2.95	2.85	3.62½	1.70
Pineedle Siberian, cans	lb.	.75	.85	.85	.75	.97	.36
Pinus, Sylvestris, 25 lb tins	lb.	1.90	2.00	2.00	1.90	1.69	1.85
Pumilio, USP, 25 lb tins	lb.	2.85	2.95	2.95	2.85	2.78	2.50
Rose Fr, 8, 16, & 32 oz pkgs	lb.	12.00	15.00	15.00	12.00	9.00	12.50
Bulg, 8, 10 & 32 oz pkgs	lb.	10.25	13.00	13.00	10.25	10.25	19.00



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Morphine and Salts
Quinine and Salts
Salicylates
- Acid Acetylsalicylic
- Acid Salicylic
- Methyl Salicylate
- Sodium Salicylate
- Salol
- Minor Salicylates

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Essential Oils

Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

recently, this does not reflect any weakness. American cold pressed oil is unobtainable due to the fact that the orange crop has been of good quality and the fruit is being marketed directly as fruit. As to the Italian oil a report from a factor there states that the producing season is now in full swing and an important portion of the oil has already been absorbed.

Oil Pennyroyal — Demand has been slow and stocks are pressing for consumption. Factors have therefore reduced spot quotations to $1.50 per pound.

Oil Peppermint — The country continues to hold the market in a firm position. Despite the fact that the crop is known to be abnormally large and factors here have been anticipating lower prices when efforts were made to market it, there has been no break in the position. The movement has not been heavy as consumers have been holding back following the reports of the large crop. However, the position at present is one of watchful waiting. If consumers or dealers attempt to cover large requirements there appears no doubt that the market will advance sharply, But if any of the farmers weaken in the face of large stocks, the grip of the producers will break and the market will become disorganized.

Oil Spearmint — The market remains firm both on spot and in the primary market. The crop is believed to be well balanced with consumption. Spot quotations are slightly lower at $4.25 @ $4.40.

Oil Pemento — Easier conditions prevail in this oil and factors now quote $2.85 per pound.

Oil Pineneedle — Siberian oil is coming through in larger quantities and at lower prices. Factors on spot have therefore lowered their prices and now name 75c @ 85c per pound as to quantity.

Oil Thyme — Lower prices are effective on red thyme oil which is now quoted at 80c per pound spot. White oil is easier in position at 90c per pound.

Oil Vetivert — The large production of Indian oil caused by the fact that the roots from which the oil is distilled ran wild, has lowered the price on that grade sharply to $16.00 per pound. This has forced down the Bourbon grade which now offered at $5.85 per pound.

Oil Wormseed — This market continues weak due to steadily decreasing consumption and great over-production. The latest price is $2.85 @ $2.95 per pound spot.

Oil Wormwood — The situation in this oil continues to grow tighter due to increasing scarcity of spot supplies and higher replacement values. Present quotations are at $12.50 @ $13.50 lb.

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Rosemary, USP, 27½ lb tins	lb.	.47½	.52½	.52½	.47½	.47½	.65
1000 lb drums	lb.	.42½	.45	.45	.42½	.42½	.62½
Tech, 25½ lb tins	lb.	.....	.34	.34	.34	.37	.57
Rue, 1 lb bot	lb.	3.15	3.25	3.25	3.15	3.81½	3.85
Sandalwood							
Sandalwood, E Ind, USP, 100 lb case	lb.	7.50	7.15	7.15	7.05	7.13	4.75
W Indian (Amayris), 25 lb tins	lb.	2.30	2.35	2.35	2.30	2.10	1.15
Sassafras, USP, 50 lb cans	lb.	.75	.80	.80	.75	.98	.55
Artificial, 1000 lb drs, 60 lb cans	lb.	.26	.28	.28	.26	.26	.24
Safrol, cans	lb.	.28	.29	.29	.28	.27½	.30
Savin, 50 lb tins	lb.	1.75	1.90	1.90	1.75	1.84	1.80
Spearmint							
Spearmint, USP, 50 lb tins	lb.	4.25	4.45	4.45	4.25	3.89	3.40
Spruce, 50 lb tins	lb.	1.00	1.10	1.10	1.00	1.07	.45
Tansy, American, 25 lb tins	lb.	4.25	4.50	4.50	4.25	4.85	4.25
Tar, 50 gal bbls	lb.	.25	.30	.30	.25	.25	.....
USP, 50 gal bbls	lb.	.75	1.50	1.50	.75	.75	.....
Thyme, red, NF, 25 lb tins	lb.	.80	.90	.90	.80	.85	1.15
White, NF, 25 lb tins	lb.	.85	.90	.90	.85	.97	1.25
Tech, 110 lb drums	lb.	.60	.70	.70	.60	.65	.....
Turpentine, USP, rect cbys	lb.	.....	.....	.....	.....	.30	.45
Vetivert Bourbon, 10 bot	lb.	5.85	6.00	6.00	5.85	9.90	2.00
Indian, 1 lb bot	lb.	15.00	16.00	16.00	15.00	28.33	12.00
Java, 1 lb bot	lb.	15.00	16.00	16.00	15.00	18.83	.....
Wine, heavy, 1 lb bot	lb.	1.65	1.75	1.75	1.65	1.75	4.00
Wintergreen							
Wintergreen, Sweet bch, 25 lb tins	lb.	2.50	4.75	4.75	2.50	2.50	1.45
Southern, 25 lb tins	lb.	1.85	2.00	2.00	1.85	1.85	.....
Gaultheria, true, 25 lb tin	lb.	8.00	10.00	10.00	8.00	8.00	4.25
Southern, 25 lb tins	lb.	3.75	4.00	4.00	3.75	3.75	.....
Synthetic see Methyl Salicylate							
Wormwood, dom, 25 lb tins	lb.	.....	12.50	12.50	12.50	7.84	3.75
Wormseed, Balt, 25 lb tins	lb.	2.85	2.95	2.95	2.85	3.36	1.40
Ylang Ylang Bourbon, 10 lb tins No 1	lb.	9.00	9.50	9.50	9.00	12.00	.....
10 lb tins No. 2	lb.	6.75	7.00	7.00	6.75	7.00	.....
Manila, 1 lb bot	lb.	30.00	32.00	32.00	30.00	32.25	28.00

Oleoresins

Aspidum, USP, bot and tins	lb.	.....	2.10	2.10	2.10	2.11	1.90
Capsicum, USP, bot and tins	lb.	3.50	4.25	4.25	3.50	3.28	2.75
Cubeb, USP, bot and tins	lb.	3.00	3.25	3.25	3.00	3.25	2.90
Ginger bot and tins	lb.	2.25	2.75	2.75	2.25	2.25	4.25
Malefern see Aspidum							
Orris, bot & tins	lb.	15.00	18.00	18.00	15.00	15.00	.....
Pepper, black, USP, bot & tin	lb.	.....	.....	.....	.....	4.50	.....
Vanilla, bot & tins	lb.	8.00	8.75	8.75	8.00	9.00	.....

Perfumer's Sundries

Almond Meal, 25 lb cans	lb.	.20	.21	.21	.20	.25	.22
Amber liquid, 400 lb drs	lb.	2.20	2.30	2.30	2.20	2.20	.....
Ambergris, Black, boxes	oz.	14.00	15.00	15.00	14.00	17.50	26.00
Gray boxes	oz.	32.00	36.00	36.00	32.00	32.00	28.00
Balsams							
Balsam Copaiba Para, 80 lb cases	lb	.48	.49	.49	.48	.43½	.44
South American, USP, 80 lb cases	lb.	.51	.52	.52	.51	.55	.41
Peru, 120 lb cases	lb.	1.65	1.70	1.70	1.65	1.71½	1.50
Tolu, 90 lb cases	lb.	1.10	1.20	1.20	1.10	1.15½	.50
Benzoin Gum, Siam, boxes	lb.	1.20	1.30	1.30	1.20	1.12½	1.50
Castoreum, 1 lb bot	lb.	9.50	10.00	10.00	9.50	12.00	11.00
Chalk, Precip, 1 gt 175 bbls	lb.	.04½	.05	.05	.04½	.04½	.....
Cherry Laurel Water, 24 ltr cby	lb.	4.10	4.60	5.60	4.10	6.07	6.60
Civet, Abyssin, horns	oz.	2.10	3.00	3.00	2.10	2.10	1.50
Labdanum, 5 lb bot	lb.	5.50	6.00	6.00	5.50	7.50	.....
Lanolin, hydrous, 350 lb bbls	lb.	.15	.16	.16	.15	.19	.....
Anhydrous, 350 lb bbls	lb.	.16	.17	.17	.16	.22	.....
Musk Pods Cabardine, tins	lb.	.....	.....	.....	.....	.....	8.00
Musk							
Tonquin, tins	oz.	24.00	26.00	26.00	24.00	24.00	13.00
Grains Cabardine, tins	oz.	.....	.....	.....	.....	.....	12.00
Tonquin tins	oz.	28.00	34.00	34.00	28.00	36.00	16.00
Synthetic See Aromatic Chemical							
Orris Rt Flor powd bbls	lb.	.12	.13	.13	.12	.12	.19
Verona powd, bbls	lb.	.10	.11	.11	.10	.10	.14
Petrolatum							
Petrolatum, snow white, 350 lb bbls	lb.	.12½	.13½	.13½	.12½	.12½	.10
Light Amber, 350 lb bbls	lb.	.12½	.13	.13	.12½	.04½	.03
Rice Starch, 140 lb bags	lb.	.09	.10	.10	.09	.09	.....
Rose Water, 24 ltr cbys	cby.	5.00	5.50	5.50	5.00	8.55	5.02
Sandalwood, pwd bags,	lb.	.22½	.40	.40	.22½	.61½	.75
Saponin, 5 lb tins	lb.	1.15	1.30	1.30	1.15	1.15	.....
Talc, Italian, 220 lb bags	ton.	60.00	80.00	80.00	60.00	60.00	35.00
French, 220 lb bags	ton	40.00	45.00	45.00	40.00	40.00	15.00

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Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

Crude Drugs

The opening of the year finds the crude drug market in a sound condition. In general, prices are firm despite the absence of demand but all sellers declare that both the inquiry and demand have been of much better proportions during the past few days. Some consumers have not yet completed taking inventory and are only purchasing for immediate needs. The sudden turn of the weather throughout the East created a better demand for constituents of cough curing compounds and prices have consequently strengthened. The demand for narcotic botanicals, is extremely light and the reason being unaccountable.

Aconite — The local market was devoid of substantial sales but prices were maintained at unchanged levels in all quarters. Leaves are quoted at 9c @ 11c per pound and roots at 23c @ 27c per pound. Second year roots are being collected now in the primary markets and by mid-February, the spot market will be in heavier supply and consequently tend to soften the market.

Agar-Agar — Very quiet here and equally dull in Kobe. The spot market for No. 1 is named at $1.00 @ $1.20 per pound dependent upon source and quality and in some sources 98c per pound is heard. Sales of No. 2 grade are confined to narrow limits and range as low as 78c per pound. No. 3 is offered freely at 59c per pound. Evidencing the dullness of agar-agar, there have been no visible arrivals in the port of New York for the past three weeks.

Aletris Root — There is little interest shown by consumers and the market has precipitated again. A reduction of one cent per pound was effected by this condition and in effort to stimulate the demand. Collections in the country have been somewhat better.

Alkanet Root — Extremely quiet and sellers are not maintaining a very large supply. The market is named at 10c @ 12c per pound and may be shaded for quantity.

Aloes — All grades are in a dormant state at present and holders declare that spot supplies are not very large. Prices in Barbados are held firm by native merchants and it is believed that any sizable demand will strengthen prices. Whole leaves are quoted at $1.00 @ $1.10 per pound and powdered at $1.10 @ $1.20 per pound. The demand for Socotrine seems to be improving.

Althea Root — There is very little demand for whole root and the price of 20c @ 22c per pound may be shaded. The inquiry for cut root was termed as

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Crude Drugs and Spices						
Aconite Leaves, bales	lb.	.09	.11	.09	.09	.07
Root, USP, bags	lb.	.23	.27	.23	.24	.11
Agar Agar, No. 1, 200 lb bale	lb.	.98	1.00	.98	1.07	.45
No. 2, 200 lb bales	lb.	.78	.90	.78	.89	.40
No. 3, 200 lb bales	lb.	.59	.....	.59	.70	.37
Agaric White, cases	lb.	.60	.75	.60	.60	.11
Granulated, boxes	lb.	.80	.95	.80	.80	.....
Almonds Bitter, boxes	lb.	.80	.....	.80	.79	.....
Sweet boxes	lb.	.65	.70	.65	.65	.....
Meal barrels, boxes	lb.	.15	.30	.15	.15	.07
Aletris Root, bags	lb	.40	.41	.40	.42	.26
Alkanet Root, bags	lb.	.10	.12	.10	.10	.06
Aloes						
Aloes, Barbados, 120 lb bbl	lb.	1.00	1.10	1.00	1.00	1.15
Powdered	lb.	1.10	1.20	1.10	1.10	.....
Cape, 400 lb cases	lb.	.09½	.10	.09½	.10	.08
Curacao, 100 lb cases	lb.	.12	.12½	.12	.11¾	.10
Gourds	lb.	.35	.45	.35	.35	.09½
Socotrine, Whole, 300 lb cs	lb.	.40	.....	.40	.35	.22
Althea Root, bags	lb.	.20	.22	.20	.20	.16
Cut cases	lb.	.36	.40	.36	.42	.22
Grd & powd, bags	lb.	.30	.32	.30	.33	.....
Ammoniac Gum Tears, cases	lb.	.20	.....	.20	.20	.17½
Angelica Root, bags	lb.	.18	.20	.18	.21½	.15
Imported	lb.	.14½	.....	.14½	.14½	.18
Angostura Bark, bags	lb.	.18	.....	.18	.18	.14½
Anise Levant, bags	lb.	.12½	.13	.12½	.12½	1916
Star case	lb.	.14	.15	.14	.16½	.19½
Spanish, bags	lb.	.13	.13½	.13	.15	.10
Arabic Gum						
Arabic Gum, White, No. 1, 100 lb bags	lb.	.22	.27½	.22	.22	.25
Seconds, 200 lb bags	lb.	.16	.21	.16	.16	.19
Sorts, Amber, 220 lb bags	lb.	.10½	.10¾	.10½	.10½	.10½
Powd, USP, 300 lb bbls	lb.	.19	.21	.19	.19	...
Areca Nuts, 100 lb bbls	lb.	.12	.12½	.12	.13	.05
Powd, 100 lb bbls	lb.	.18	.21	.18	.17¾	.....
Arnica Flowers, bales	lb.	1.48	1.50	1.48	....	.12
Root, bags	lb.	.37	.40	.37	.37	.40
Arrowroot American powd bbls	lb.	.10	.10½	.10	.10	.....
St. Vincent powd bbls	lb.	.10	.10½	.10	.10½	.08
Asafoetida 250 lb cases	lb.	.30	.31	.30	.30½	.25
Powd 50 lb boxes	lb.	.65	.68	.65	.60	.....
Tears Fancy	lb.	.60	.70	.60	.61½	.19
Balm Gilead Buds bags	lb.	.38	...	.38	.37	.24
Balmony Herbs bales	lb.	.18	.....	.18	.13	.06¾
Barberry Bark bales	lb.	.12	.12½	.12	.10½	1918
Root bags	lb.	.29	.32	.29	.24	.06¾
Bayberry Bark bales	lb.	.12	.12½	.12	.09½	.05
Wax bbls	lb.	.29	.32	.29	.29	.27
Belladonna						
Belladonna Leaves bales	lb.	.22	.23	.22	.20	.50
Root bags	lb.	.20	.21	.20	.20	.10
Bees Wax White cases	lb.	.57	.58	.57	.58	.47½
Yellow refined cases	lb.	.41	.42	.41	.44	.40
Benzoin Gum Siam boxes	lb.	Nom.	.....	.....	1.25	1.50
Powdered	lb.	1.50	.....	1.50	1.47	.....
Sumatra 80 lb boxes	lb.	.65	.68	.65	.59	.34
Berberis Aquafolium Root bags	lb.	.13	.....	.13	.11½	.11
Beth Root bags	lb.	.18	.....	.18	.18	.08½
Bitter Root 100 lb bags	lb.	.19	.20	.19	.21	.24
Blackhaw Bark of Root bales	lb.	.30	.....	.30	.27	.17
Bark of Tree bales	lb.	.18	.18½	.18	.15½	.04½
Black Indian Hemp Root 100 lb bags	lb.	.20	.....	.20	.20	.20
Blood Root bags	lb.	.24	.25	.24	.15	.09
Blueflag Root bags	lb.	.20	.27	.20	.20	.13
Boldo Leaves bales	lb.	.15	.17	.15	.15	.12½
Boneset Herb bales	lb.	.07½	.08	.07½	.07¾	.07
Leaves bales	lb.	.11	.12	.11	.09½	.....
Borage Flowers bales	lb.	.16	.17	.16	.17	.17½
Broomtop Herb Cut bales	lb.	.10	.11	.10	.10	.07¾
Bryonia Root bags	lb.	.10½	.11	.10½	.10¾	.12
Buchu Leaves						
Buchu Leaves Short 250 lb bbls	lb.	.48	.50	.48	.48	1.40
Long bales	lb.	.75	.80	.75	.75	1.30
Buckbean Leaves bales	lb.	.13	.15	.13	.12¾	.07½
Buckthorn Bark bags	lb.	.05	.05½	.05	.05	.20
Berries bags	lb.	.45	.50	.45	.52½	.18
Burdock Root bags	lb.	.12	.14	.12	.11¾	.07
Seed bags	lb.	.65	.....	.65	.58½	.08
Burgundy Pitch, 110 stand gross for net	lb.	.08	.09	.08	.08	.04
Imported	lb.	.12	.13	.12	.11¾	.06¾
Calabar Beans bags	lb.	.25	.27	.25	.27½	.25
Calamus Root, blchd cases	lb.	.37	.38	.37	.38½	.23
Unbleached, bags	lb.	.06½	.07	.06½	.06¾	.09
Calendula Petals, imp bales	lb.	.90	.95	.90	.82	.40
Calisaya Bark, bales	lb.	.23	...	.23	.25	.17
Powdered, bbls	lb.	.28	.32	.18	.28	.....

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fair and prices were firm at 36c @ 40c per pound. The ground and powdered grades of second year root are moving freely at 30c @ 32c lb. Collections were not above normal in the latest harvest and it is most likely that prices will hold steadily until the new crop next Fall.

Anise — Spanish anise is firm on spot and meeting a lively demand at 14c @ 15c per pound. Star is similarly priced on the general market but 13c @ 13½c per pound has been quoted. The Levant is quiet at 12½c @ 13c per pound.

Arabic Gum — Amber sorts show signs of strengthening but otherwise the market is dull and featureless. Prices of 10½c per pound are available in most quarters but some holders are inclined towards higher prices and name 10¾c per pound as their low selling figure. Powdered sorts are held at 19c @ 21c per pound and do not meet a very large demand.

Arnica Flowers — Spot supplies are being absorbed rapidly and some suppliers have withdrawn from the market. All holders, with one exception, name $1.50 per pound as their lowest selling figure. This one holder names the market at $1.45 @ $1.48 per pound. Prices all range upwards, some sales have been made as high as $1.60 per pound and there is no hope for lower prices until late Spring or early Summer. The primary market suppliers will probably harvest the flowers earlier than usual this year.

Arrowroot — Consumers do not seem to be attracted by current prices and both St. Vincent and American are subject to shading below 10c @ 10½c lb. Recent arrivals have been of good size, the S. S. Haiti having arrived January 3rd from St. Vincent with 442 packages consigned to various individuals and may tend to weaken the market.

Bayberry Bark — Holding steadily at 12c per pound and inquiries are for larger volume. Bayberry root is steady at 21c @ 23c per pound.

Belladonna Leaves — Held without change but does not appear any too firm as reports from the foreign markets indicate a weakening there. Local sellers are asking 22c @ 23c per pound and might be tempted to name lower figures with a firm offer. The root was lowered one cent per pound in one source to 20c per pound, in sympathy with the recent declines in the price of leaves. The London market has been reduced.

Benzoin Gum — Siam gum is still unavailable on the open market. Transactions involving small quantities have been made and the Sumatra gum is in a firm position at 65c @ 68c lb. as a result.

Blood Root — The market remains in

		Current Market		1928 High	1928 Low	1927 Aver.	1914 July
Canary Seed, South America, bags	lb.	.04¼	.05	.05	.04¼	.04¼	.06
Dutch, bags	lb.	.05¾	.06¼	.06¼	.05¾	.05¾	.09
Candelilla Wax, bags	lb.	.27	.28	.28	.27	.33	.22
Cannella Alba Bark, bales	lb.	.30	.32	.32	.30	.32	.08
Cannabis True, Imp, bags	lb.	.....	.....	.....	.....	.....	1.55
American (no assay), bale	lb.	.25	.....	.25	.25	.25	.26
USP	lb.	.22	.30	.30	.22	.25	1918
Cantharides, Chinese, cases	lb.	.70	.72	.72	.70	.70¼	.63
Powdered, bags	lb.	.80	.88	.88	.80	.90	1.60
Russian, cases	lb.	.60	.65	.65	.60	.60	2.00
Powdered, boxes	lb.	.80	.....	.80	.80	.73¾	2.25
Caraway Seed, African, bags	lb.	.12	.....	.12	.12	.12	1918
Dutch 11 lb bags	lb.	.12	.....	.12	.12	.11	.08
Cardamon Bleached, cases	lb.	1.50	1.80	1.80	1.50	1.60	1.30
Decorticated, cases	lb.	1.35	1.55	1.55	1.35	1.55¾	1.15
Carnauba Wax No. 1, bags	lb.	.57	...	.57	.57	.60	.45
No. 2 bags	lb.	.55	.....	.55	.55	.54	.42½
No. 2 N Country, bags	lb.	.36	.....	.36	.36	.41¼	.32
No. 3 N Country, bags	lb.	.34	...	.34	.34	.36	.29
No. 3 Chalky, bags	lb.	.39	.40	.40	.39	.39	.33
Cascara Amarga, 150 lb bbls	lb.	.90	.....	.90	.90	.90	.....
So called bales	lb.	.60	.85	.85	.60	.62	.82
Cascara							
Cascara Sagrada, bales, 1923 bark	lb.	.20	.....	.20	.20	.20	.....
1924 bark	lb.	.18	.....	.18	.18	.18	.....
1925 bark	lb.	.16	...	.16	.16	.16	.....
1926 bark	lb.	.15	.16	.16	.15	.15	.....
1927 bark	lb.	.14	.15	.15	.14	.90	.....
Cascarilla Bark, quills, bales	lb.	.90	1.00	1.00	.90	.....	.22
Siftings, bbls	lb.	.65	.....	.65	.65	.65	.11
Cassia Batavia No. 1 bbls,	lb.	.14½	...	.14½	.14½	.12½	.18
Shortstick, bales	lb.	.11½	.....	.11¼	.11½	.11½	.11
Batavia No. 3, bales	lb.	.09¼	.10	.10	.09¼	.09¾	1918
China Select Rolls, cases	lb.	.12	.13½	.13½	.12	.12	.07¼
Broken, bales	lb.	.07¾	.08	.08	.07¾	.07¾	.05½
Saigon, thin	lb.	.22	.23	.23	.22	.18½	.28½
Buds, cases	lb.	.18½	.19	.19	.18½	.17½	.11½
Fistula, baskets	lb.	.22	.24	.24	.22	.16½	.06½
Catnip, Herb, bales	lb.	.18	.23	.23	.18	.18	.08½
Celery Seed, bales	lb.	.19	.20	.20	.19	.19¾	.17½
Ceresin Wax, White, bags	lb.	.15	.20	.20	.15	.15	.14
Yellow, 200 lb bags	lb.	.11	.14	.14	.11	.11	.12
Imp., 100 lb bags	lb.	.25	.38	.38	.25	.25	.....
Chamomile							
Chamomile Flowers, bales	lb.	.24	.26	.26	.24	.21½	.15
Hungarian, cases	lb.	.19	.19½	.19½	.19	.26½	.35
Charcoal Willow, powd, bbls	lb.	.06	.06½	.06½	.06	.06	.....
Wood, powd, bbls	lb.	.04	.05	.05	.04	.04	.04
Chestnut Bark	lb.	.07	.08	.08	.07	.....	.....
Leaves, bales	lb.	.06	.06½	.06½	.06	.06	.05
Chicle Gum, lb bbls	lb.	.58	.75	.75	.58	.58	.60
Chiretta, bales	lb.	.25	.....	.25	.25	.25	.14
Cinchona							
Cinchona Bark, Red Quill, bales 10 inch	lb.	.65	.....	.65	.65	.68½	.....
20 inch	lb.	.70	.....	.70	.70	.70	.....
40 inch	lb.	.85	.....	.85	.85	.85	.....
Chips, 150 lb bags	lb.	.23	.27	.27	.23	.23	.12
Cinnamon, Ceylon No. 1, bales	lb.	.62	...	.62	.62	.59	.30
No. 2 bales bend	lb.	.61	.....	.61	.61	.58	.29
No. 3 bales	lb.	Nom.	.....	Nom.	Nom.	.44½	.28
Clover Tops, Red, bags	lb.	.10	.11½	.11½	.10	.11¼	.08
Cloves, Zanzibar, 135 lb bbl	lb.	.18	.19	.19	.18	.20	.15½
Cochineal, Black	lb.	.69	...	.69	.69	.69	.44
Silver	lb.	.85	.....	.85	.85	.84¾	.42
Cohosh Root, Black, bags	lb.	.09	.....	.09	.09	.07½	.04
Blue, bags	lb.	.09	.....	.09	.09	.08	.05
Colchicum Root, bags	lb.	.06	.07	.07	.06	.06¼	.11
Seed, bags	lb.	.25	.....	.25	.25	.23	.20
Columbo Root							
Columbo Root, bags	lb.	.05	.06	.06	.05	.4¾	.06
Colocynth Pulp, bales	lb.	.85	.90	.90	.85	.81	.23
Coltsfoot Leaves, bags	lb.	.10	.12	.12	.10	.10	.06
Comfrey Root, bags	lb.	.14	...	.14	.14	.10¾	.08
Condurango Bark, bags	lb.	.14	.....	.14	.14	.13	.12½
Conium, Herb, bags	lb.	.11	.12	.12	.11	.11	.06
Seed, bags	lb.	.11	.12	.12	.10	.10	.09
Copaiba Balsam Para, see Balsams							
Coriander Seed, Bombay, bags	lb.	Nom.	.....	Nom.	Nom.	.07½	.08
Morocco, bags	lb.	.09½	.10	.10	.09½	.05½	.4¾
Bleached, bags	lb.	.16	.19	.19	.16	.12½	.05
Corn Silk, bales	lb.	.06	.....	.06	.06	.06	.08
Cotton Root Bark, bales	lb.	.13	.13½	.13½	.13	.12	.06½
Cowhage, 1 oz tins	lb.	.95	.....	.96	.95	.96½	.....
Cramp Bark, So called bales	lb.	.06	.07	.07	.06	.06½	.06½
True, bags	lb.	.50	.55	.55	.50	.49	1918
Cranesbill Root, bags	lb.	.12	.....	.12	.12	.11	.07½
Cubeb Berries							
Cubeb Berries, XX bags	lb.	.48	.53	.53	.48	.48	.42
Powdered, boxes	lb.	.50	.55	.55	.50	.57¼	.42
Culvers Root, bags	lb.	.19	.20	.20	.19	.18	.14
Cuminmin Seed, Malta, bags	lb.	.15	...	.15	.15	.12½	.10
Morocco, bags	lb.	.15	.....	.15	.15	.12½	1918
Cuttlefish, Bone Trieste, Straps	lb.	.13	.....	.13	.13	.13	.14½
French, boxes	lb.	.12½	.15	.15	.12½	.12½	.12½
Powdered, bbls	lb.	.09	.10	.10	.09	.09	.05
Broken, bales	lb.	.05	.....	.05	.05	.05½	.05
Damiana Leaves, bales	lb.	.23	.30	.30	.23	.30	.08
Dandelion Root, Imp, bags	lb.	.14	.16	.16	.14	.14½	.10½

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Digitalis Leaves
Gentian Root
Henbane Leaves
Henna
Lobelia Herb
Nux Vomica
Orris Root
Sarsaparilla Root
Senna
Stramonium Leaves

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a tight position and not very amply supplied. The recent advances from 19c per pound to its present position of 24c @ 25c per pound have caused a heavy re-action among consumers. Reports from the South do not bear news of improvement in collections and further advances are not remote.

Borage Flowers — In an effort to stimulate interest among the consuming interest, prices were lowered to 16c @ 17c per pound, representing a decline of one cent per pound.

Buchu Leaves — The descending prices held over the period under review but retained a weak character. The African market is in a softer position and short leaves for future shipment were quoted at substantially lower prices.

Calamus Root — This market is a trifle lower and is now named at 37c @ 39c per pound for bleached root. The demand for all grades has been fair and the price reduction is attributed to the arrival of Fall collections from India, causing a surplus of spot supplies.

Calendula Petals — Unchanged on spot at 90c @ 95c per pound with a routine amount of business prevailing and no unusual reports from the European market.

Canary Seed — Both South American and Dutch are weak in price and in steady movement. Buyers are taking advantage of the low prices and buying good lots for future shipment.

Cantharides — Powdered forms of both Chinese and Russian are still selling at the same basis, 80c per pound but buyers show a disinclination to buy in large quantity. The market has been quiet for some time and the trend, if any, is toward lower prices.

Cascara Sagrada — Official prices failed to show any change but rumors of shading were heard. Holders of bark, particularly the aged material were inclined to quote below the established market figures. Last years bark is priced at 14c @ 15c per pound, 1926 supply may be bought at 15c @ 16c per pound and possibly lower.

Cassia Fistula — The local market passed a featureless week and prices were held in all quarters at 22c @ 24c per pound. A factor in Amsterdam reports that the new first lot of crop material has arrived and the market has descended as a result. This material will probably be seen in the domestic market within a few weeks and probably create a revision in prices to a lower basis.

Chamomile Flowers — Conditions surrounding the market for Hungarian flowers are strong and most quotations are made at the high range of the market,

		Current Market	1928 High	1928 Low	1927 Aver.	1914 July
Deer Tongue Leaves, bales	lb.	.15	.18	.15	.19	.07½
Digitalis Leaves, bales	lb.	.38	.42	.30	.30	1918
Dill Seed, bags	lb.	.07	...	.07	.05½	.07½
Cleaned, bags	lb.	.08	.....	.08	.08	.08
Dogwood Bark, Jamaica bags	lb.	.09½	.10½	.10½	.09½	.05
American bales	lb.	.06½	.....	.06½	.06½	.07½
Doggrass Root USP, cut bags	lb.	.12	.12½	.12	.13	.06½
Dragons Blood Mass, cases	lb.	.65	.70	.65	.69	.25
Reeds, boxes	lb.	.95	.....	.95	.95	.45
Echinacea Root, bags	lb.	.30	.33	.30	.30	.22
Elcampane Root, bags	lb.	.80	.09	.08	.08	.06½
Elder Flowers, bags	lb.	.19	.20	.19	.15	.11
Elemi Gum, 85 lb cases	lb.	.20	.21	.20	.20	.....
Elm Bark, bundles	lb.	.24	.....	.24	.21½	.17
Grinding bags	lb.	.13½	.14	.13½	.13½	.09
Powdered, bbls	lb.	.20	.22	.20	.20½	.....
Ephedra Vulgaris, bales	lb.	.24	.25	.24	.31½	.....
Ergot						
Ergot, 150-200 lb bags	lb.	1.45	1.65	1.45	1.22	.....
Eucalyptus Leaves, bales	lb.	.07	.08	.07	.05	.04
Euphorbia Pilulifera, Herb, bags	lb.	.08	.08½	.08	.08	.08
Euphorbium Gum, cases	lb.	.14	.20	.14	.14	.12
Powdered, boxes	lb.	.25	.....	.25	.25	...
Fennel Seed, French, bags	lb.	.17½	.19	.17½	.11½	.06½
German, bags	lb.	.28	.30	.28	.24½	.10
Fenugreek Seed, 200 lb bags	lb.	.05	.06	.05½	.05½	.03
Fish Berries, 100-125 lb bag	lb.	.06	.07½	.06	.06	.03½
Flax Seed, Whole 182 lb bbls	lb.	14.00	14.75	14.00	14.10	10.00
Ground 180 lb bbls	lb.	.08	.08½	.08	.08	1918
Flea Seeds Black bags	lb.	.16	.20	.16	.38	.....
Fringe Tree Bark or Root bags	lb.	.23	.25	.23	.22	17½
Fumigat Pastilles Red Bulk lb boxes	lb.	.30	.35	.30	.30	.20
Galangal Root bags	lb.	.11	.13	.11	.14	.08
Galbanum Gum, cans	lb.	1.00	.....	1.00	1.59	.60
Gamboge Gum, 100 lb cases	lb.	1.20	1.30	1.20	1.09	.66
Powdered, cases	lb.	1.25	1.35	1.25	1.22½	.65
Gelsemium Root, bags	lb.	.09	.10	.09	.09	.05
Gentian Root						
Gentian Root, bags	lb.	.09½	.11	.09½	.08½	.06½
Ground bbls, boxes	lb.	.13	.14	.13	.11½	.....
Powdered, bbls, boxes	lb.	.13	.....	.13	.02½	.....
Ginger, African, bags	lb.	.10½	.11	.10½	.09½	.05
Jamaica Grinding, bags	lb.	.18	.....	.18	.14½	.15
Cachin, ABC & Lemon, bags	lb.	.16	.17	.16	.14	.06½
Ginseng Root, cultivated cs	lb.	8.00	10.00	8.00	8.00	5.00
Wild Southern, cases	lb.	8.50	10.00	8.50	8.50	6.00
Fibers, cases	lb	3.75	4.00	3.75	3.75	.....
Golden Seal Root, bags	lb.	4.30	4.50	5.30	4.65	4.50
Powdered, boxes	lb.	5.00	5.25	5.00	5.26	5.15
Herb, barrels	lb.	1.25	1.30	1.25	1.25	.47
Grains of Paradise, bags	lb.	.45	.50	.45	.40½	.15
Grindelia Robusta, Herb, bale	lb.	.09	.10	.09	.09	.05
Guaiac Gum, 150 lb cases	lb.	.38	.40	.38	.39	.27
Powdered, strained, 75 lb cs	lb.	.70	.75	.70	.64½	1918
Guarana, tin cases	lb.	1.65	2.00	1.65	1.65	1.80
Gum, see Arabic Gum, etc						
Hellebore Root, Black, bbls	lb.	.05½	.06	.05½	.05½	.06
Powdered	lb.	.12	.13	.12	.11	.....
White, 250 lb bbls	lb.	.07½	.08½	.07½	.07½	1918
Powdered	lb.	.12	.14	.12	.11	.10
Helonias Root, bags	lb.	.80	.....	.80	.74	.50
Hemp Seed, bags	lb.	.04½	.05	.04½	.04½	.02½
Henbane Leaves, USP, bales	lb.	.21	.23	.21	.25	.14
Henna Leaves						
Henna Leaves, bales	lb.	.12½	.13	.12½	.12½	.13
Powdered	lb.	.16	.....	.16	.16	.....
Honey, Calif., 120 lb cases	lb.	.11	.12	.11	.11	1918
Hops, bales	lb.	.25	.26	.25	.27	.17
Horehound, Herb, bales	lb.	.08½	.09	.08½	.08½	.06½
Hydrangea Root, bales	lb.	.08	.....	.08	.08½	.07
India Gum, see Karaya						
Insect Flowers	lb.	.22	.24	.22	.22½	.18
Powdered, Pure, 200 lb bb	lb.	.32	.33	.32	.26	.22
Ipecac						
Ipecac Root, Cartagena, bags	lb.	3.25	3.30	3.25	3.29	1.42½
Powdered, 220 lb bbls	lb.	3.60	3.65	3.60	3.74	1918
Rio ,Whole, bags	lb.	Nom.	.....	Nom.	3.51	2.00
Powdered, 110 lb bbls	lb.	Nom.	.....	Nom.	3.74	1918
Isinglass, American, 130 lb cases	lb.	.95	1.00	.95	.95	.71
Russian (Beluga), boxes	lb.	4.50	.....	4.50	4.50	3.50
Jaborandi Leaves, bales	lb.	.13	.....	.13	.12	.14
Jalap Root, Whole, 150 lb bag	lb.	.16	.18	.16	.17½	.21
USP, Powd, 250 lb bbls	lb.	.22	.24	.22	.23½	.....
Japan Wax, 24 lb cases	lb.	.18½	.19	.18½	.19½	.11
Job's Tears, White, bags	lb.	.15	.....	.15	.15	.08
Juniper Berries						
Juniper Berries, 125 lb bags	lb.	.07	.07½	.07	.07	.03½
Sifted, bags	lb.	Nom.	.....	Nom.	.....	.....
Kamala, boxes	lb.	.90	.95	.90	.94½	.57
Karaya Gum, Powdered, bbls	lb.	.12	.13	.12	.12	.15
Kava Kava Root, bags	lb.	.16	.....	.16	.15½	.18
Kino Gum, Black, cases	lb.	.50	.55	.50	.50	.22
Kola Nuts, 150 lb bags	lb	.09	.....	.09	.09	.08
Kousso Flowers, bags	lb.	.70	.....	.70	.72	.....
Lady Slipper Root, bags	lb.	.90	...	.90	.62	.24
Larkspur Seed, bags	lb.	.35	.40	.40	.61	.25

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CHERRY BARK, WILD	LODESTONE
CINCHONA BARK	NUTGALLS
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Standard Purchasing Power of the Dollar: July 1914 $1.00 - Jan. 1927 68.7c - July 1927 71.7c - Dec. 1927 68.6c

20c @ 21c per pound. Prices of 19c @ 19½c per pound are still named in some directions and within the course of the next few weeks, spot supplies may be of lesser volume and cause the withdrawal of the low prices. Good white flowers are not very plentiful.

Cinchona Bark — The market seems to be on a sound basis, now quotations are firm and business is normal. This soundness, however, does not indicate that the market will regain the declines witnessed in November. The latest import figures available reveal that 75,117 pounds valued at $38,665 were entered for consumption during November. Of this figure, 65,557 pounds came from Netherlands, 7,788 pounds from United Kingdom, 1,722 pounds from Ecuador and 80,367 pounds emanated from Belgium.

Condurange Bark — Stocks were not very large and offered at 16c per pound with some quotations at 14c per pound. Sales were few and for minute quantities.

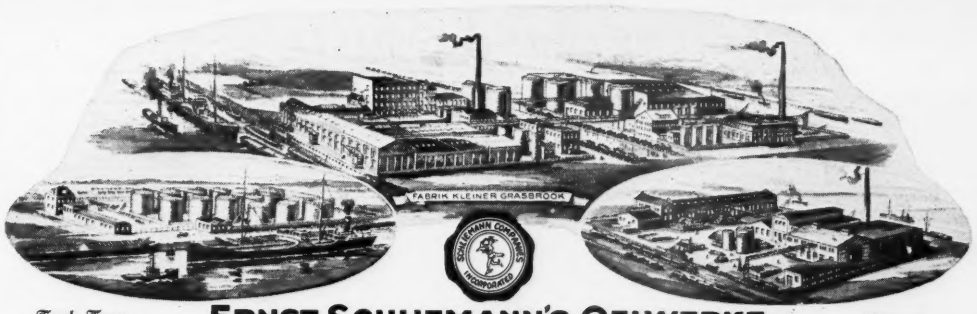
Corinader Seed — Prices held firmly and will probably be maintained until the new crop in July. The Morocco crop is short and prices are quoted at 9½c @ 10c per pound. The Indian crop is also short and merchants there have been buying in the Moroccan market for re-export.

Damiana Leaves — Prices dropped radically over the past fortnight. Quotations were made at 24c @ 26c per pound and in one direction, 23c per pound was named. This is the lowest figure since April 1927 and is caused by heavy replacements from abroad. The descending market has created a sharp degree of competition and a firm bid would probably produce lower figures.

Digitalis Leaves — Firm price quotations were the feature of the otherwise quiet market. Holders quoted 35c @ 38c per pound to a very spasmodic demand. Prime second year flowers with a high digitalis content were sold at 38c per lb.

Ergot — The week failed to reveal any change in the attitude that buyers have retained for the past month. Prices were held at $1.45 @ $1.65 per pound with very little spot demand. The high price scheme planned by the Speculative interests last August is now virtually defeated and with the release of some substantially sized supplies by the Department of Agriculture, the market appears in an easier condition than it has been for some time. There are several spot holders of ergot and its approach to normalcy is not remote. The Russian crop, upon which the success of the speculative venture hinged, has proven to be of sufficient alkaloidal content to pass the regulations of the Department and most of the spot supplies are from this source.

		Current Market		1928 High	1928 Low	1927 Aver.	1914 July
Laurel Berries, bags	lb.	.08	.09	.09	.08	.08	.05
Leaves, Greek, bags	lb.	.05½	.07	.07	.05½	.05½	.10
Italian, bales	lb.	.05	.....	.05	.05	.05	.03½
Lavender Flowers, Ordinary	lb.	.30	.35	.35	.30	.30	.20
Selected	lb.	.42	.55	.55	.42	.44½	.28
Lemon Peel, bags	lb.	.09½	.10	.10	.09½	.10	.06½
Licorice Root							
Licorice Root, Russian, Whole bbls	lb.	.12	.18	.18	.12	.12	.06
Spanish Natural bales	lb.	.05½	.07	.07	.05½	.05½	.04½
Powdered, bbls	lb.	.09	.10	.10	.09	.09	.....
Selected 2 & 5 lb bbls	lb.	.14	.16	.16	.14	.13	.09
Cutting, 125 lb bags	lb.	.06½	.07	.07	.06½	.06¾	.06½
Turkish, 150 lb bales	lb.	.05	.....	.05	.05	.05	.....
Lime Juice, Clarified, bbls	lb.	.60	.65	.65	.60	.60	.....
Linden Flowers with leaves, bales	lb.						
Bales	lb.	.30	.....	.30	.30	.22	.35
Without leaves, bales	lb.	.27	.30	.30	.27	.23	1918
Liverwort Leaves, bales	lb.	.18	.20	.20	.18	.17½	.....
Lobelia, Herb, bales	lb.	.18	.20	.20	.18	.63½	.09½
Seed, bags	lb.	.75	.75	.75	.75	.88	.25
Lovage Root, Imp, bags	lb.	.25	.27	.27	.25	.21¾	.22
Lupulin N F., tins	lb.	1.75	.....	1.75	1.75	1.61	1.75
Lycopodium, 88 lb. cases	lb.	.74	.85	.85	.74	.81	.41
Mace							
Mace Siauw No. 1, cases	lb.	.88	.90	.90	.88	.95	.....
Banda No. 1, cases	lb.	.94	.95	.95	.94	1.00	.64
Batavia No. 2, cases	lb.	.68	.....	.68	.68	.73	.49
Malva Flowers, Blue, bales	lb.	.50	.....	.50	.50	.46	.30
Black, bales	lb.	.45	.60	.60	.45	.49	1918
Leaves, bales	lb.	.14	.15	.15	.14	.14	.....
Manaca Root, bales	lb.	.22	.....	.22	.22	.61	.60
Manna, Large Flake, cases	lb.	.70	.....	.70	.70	.....	.85
Small Flake, cakes	lb.	.55	.60	.60	.55	.53	.39
Sorts, cases	lb.	.50	.....	.50	.50	.43	.....
Mandrake Root bags	lb.	.15	.16	.....	.....	.13	.11
Marjoram, Herb, French No. 1, bales	lb.	.....	.....	.....	.....	.21¾	.10
French No. 1 bales	lb.	.14½	.15½	.15½	.14½	.22	.10
German, bales	lb.	.14½	.15½	.15½	.14½	.....	.18
Mastic Gum, 120 lb cans	lb.	.60	.65	.65	.60	.52½	.62
Matico Leaves bales	lb.	.45	.....	.45	.45	.83	.25
Mesereon Bark bags	lb.	.....	.....	.....	.....	.12½	.09
Millet Seed Yellow, bags	lb.	.04½	.04½	.04½	.04½	.04	.01½
Montan Wax, Crude, bags	lb.	.06½	.07	.07	.06½	.06	.06½
Bleached, bags	lb.	.25	.28	.28	.25	.25	.24
Moss, Iceland, bales	lb.	.07½	.08	.08	.07½	.07½	.05½
Select	lb.	.15	.....	.15	.15	.15	.....
Irish, Bleached, bales	lb.	.11	.12	.12	.11	.11	.08
Mullein Flowers, tins	lb.	2.25	.....	2.25	2.25	2.22	.51
Leaves, bales	lb.	.07½	.08	.08	.07½	.07½	.06
Musk Root, Russian, bags	lb.	.18	.25	.25	.18	.26½	.12
Mustard							
Mustard Seed, Bombay Brown, bags	lb.	.05½	.06½	.06½	.05½	.05¾	1918
California, Brown, bags	lb.	.07½	.08	.08	.07½	.08¼	.05
Yellow, bags	lb.	.16	.....	.16	.16	.16	.07
Chinese, Yellow, bags	lb.	.06	.06½	.06½	.06	.07	.....
Dutch, Yellow, bags	lb.	.07½	.07½	.07½	.07½	.08	1916
English, Yellow, bags	lb.	.08½	.09	.09	.08½	.09½	.06
Myrrh Gum, 200 lb, cases	lb.	.62	.65	.65	.62	.30½	.16
Nutgalls, Chinese, bags	lb.	.22	.....	.22	.22	.22	.15
Aleppy, bags	lb.	.25	.....	.25	.25	.26	.15
Powdered, bags	lb.	.23	.....	.23	.23	.20	.....
Nutmegs, 110'0 cases	lb.	.33½	.....	.33½	.33½	.36	.13½
75's & 80's cases	lb.	.42	.....	.42	.42	.47	.15
Grinding, bags	lb.	.48	.49	.59	.48	.47½	.13½
Nux-Vomica							
Nux-Vomica Buttons, bag	lb.	.05	.05½	.05½	.05	.08	.04
Powdered, 200 lb bbls	lb.	.08	.08½	.08½	.08	.08	.07½
Oak Bark, Red, bags	lb.	.06½	.....	.06½	.06½	.06½	.08
White, bags	lb.	.04½	.06	.....	.06	.06	.03
Olibanum Gum 280 lb cases Siftings	lb.						
Tears No. 1, all white	lb.	.11½	.12½	.12½	.11½	.10½	.04½
Siftings	lb.	.25	.26	.26	.25	.23½	.10
No. 1 Extra	lb.	.27	.29	.29	.27	.27	.....
No. 2	lb.	.18	.....	.18	.18	.16½	.....
No. 3	lb.	.14	.15	.15	.14	.11½	.....
Opium Gum, USP, cases	lb.	12.00	13.00	13.00	12.00	12.00	7.70
Granular, cans	lb.	13.00	14.00	14.00	13.00	13.00	8.75
Powdered, USP, cans	lb.	13.00	14.00	14.00	13.00	13.00	8.65
Orange Flowers, cases	lb.	.25	.....	.25	.25	.25	.....
Peel, Bitter, bags	lb.	.10	.....	.10	.10	.10	.07½
Sweet, bags	lb.	.08½	.....	.08½	.08½	.08½	.04
Orris Root							
Orris Root Flor. bid, bags	lb.	.10	.11	.11	.10	.09	.19
Powdered, 200 lb bbls	lb.	.13	.15	.15	.13	.12½	1918
Verona, bags	lb.	.09	.10	.10	.09	.08½	.14
Powdered, 200 lb bbls	lb.	.13	.14	.14	.13	.12	.....
Fingers, boxes	lb.	.80	.....	.80	.80	.64	.75
Ozokerite Wax, Brown, Hard	lb.	.....	.....	.....	.....	.....	.21
Bags	lb.	.24	.25	.25	.24	.24	.....
Green, Hard, bags	lb.	.30	.31	.31	.30	.30	.25
Yellow, Refined, bags	lb.	.37	....	.37	.37	.37	.25
Papain, Crude, 150 lb cases	lb.	4.50	4.90	4.90	4.50	4.85	2.80
Pure, Powdered, 10 lb bot	lb.	4.25	4.35	4.35	4.25	5.25	.....
Paprika, bags	lb.	.28	.29	.29	.28	.33	.....
Pareira Brava Root, bags	lb.	.11	.12	.12	.11	.11	.14
Parsley Seed, bag	lb.	.25	.....	.25	.25	.27	.20



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There is also a good quantity of prime Spanish offered.

For the past few months, surface conditions evidenced the reluctancy of the consuming interests to cover their requirements but it is definitely known that some of the large buyers have been sold ample supplies at $1.30 @ $1.40 per pound through one interest. Reports from Hamburg and London indicate a weakening tendency in the European market and with supplies coming in with the volume and regularity that they are, it is believed that prices here will soon follow. There is a good deal of interest shown in forward buying.

Gentian Root — Efforts to buy below the market of 9½c @ 11c per pound were fruitless and its position is a firm one with possibilities of advancing prices.

Ginseng — Dullness is outstanding in this market, prices are subject to shading and sales are few. Collections have been small throughout the season. Expansion of this industry is being urged in the South particularly in Virginia and Kentucky where the hills are covered with ginseng and it is pointed out that after six years cultivation, a two-acre garden should yield $20,000.

Hellebore — In a stationary position with very little demand. Black root is offered freely at 5½c @ 6c per pound and white is named at 7¼c @ 8½c per pound.

Insect Flowers — The present market is rigidly sound and Japanese suppliers refuse to yield to bids lower than asked prices. Local suppliers are asking 32c @ 33c per pound but the consuming interests are reluctant to buy favoring to await further proof of the present strength. The future is highly speculative and the ability of foreign suppliers to uphold their prices depends upon the extent of their financial support. Meanwhile the Dalmatian flowers are being entered in inconsequential amounts and are making very little impression on prices. The situation proves complexing to the domestic suppliers themselves, some trust that prices are basically sound and other a reticent to buy, anticipating lower prices. The latest import figures available reveal that in October 1927, 306,400 pounds were imported from Japan, 4,442 pounds from Italy and 9,712 pounds from Belgium.

Japan Wax — Very quiet on spot and the abundance of supplies prompts shading. Sales have been made below the market of 18½c @ 19c per pound.

Lavander Flower — This market has advanced from 42c per pound to 45c @ 55c per pound. This price governs selected flowers only and there is a limited supply only distributed in very few hands. The market is rather bare of ordinary flowers

		Current Market		1928 High	1928 Low	1927 Aver.	1914 July
Passion Flower, bales	lb.	.07	.07½	.07½	.07	.07	.08
Patchouli Leaves, bales	lb.	.26	.....	.26	.26	.26	.10
Pennyroyal, Herb, 100 lb bags	lb.	.07	.....	.07	.07	.07	.07
Leaves, 100 lb bags	lb.	.14	.16	.16	.14	.16	.04
Pelitory Root, bales	lb.	.18	.19	.19	.18	.16	.20
Pepper, Singapore, Black, bags	lb.						
Black bags	lb.	.30	.32	.32	.30	.30	.11½
White, bags	lb.	.54½	.55	.55	.54½	.48	.18½
Aleppy, bags	lb.	.36½	.37	.37	.36½	.30½	.11½
Lempong, bags	lb.	.38	.....	.38	.38	.31	.10½
Tellecherry, bags	lb.	.38	.....	.38	.38	.31	.11½
Muntock, bags	lb.	.53½	.....	.53½	.53½	.43½	.....
Red Chillies, Japan, No. 1, bags	lb.						
Japan No. 1 bags	lb.	.26	.....	.26	.26	.26	.14
Mombasa, bags	lb.	.38	.39	.39	.38	.30	.14½
Capsicum, Bombay, bags	lb.	.21	.22	.22	.21	.21	.....
Peppermint							
Peppermint Leaves, Imp, bales	lb.	.50	.....	.50	.50	.50	.42
Domestic, bales	lb.	.24	.40	.40	.24	.24	.11
Herb, bundles	lb.	.12	.....	.12	.12	.12	.....
Peru Balsam, see Balsams	lb.						
Pichi Leaves, bags	lb.	.13	.14	.14	.13	.13½	.12
Pimento Select, bags	lb.	.16½	.17	.17	.16½	.17	.04½
Pink Root, True, bags	lb.	.62	.....	.62	.62	.53½	.65
Pitch Burgundy, see Burgundy Pitch							
Pleurisy Root, bags	lb.	.22	.....	.22	.22	.20	.15
Poke Berries, bags	lb.	.20	.22	.22	.20	.26	.08
Root, 200 lb bales	lb.	.09	.....	.09	.09	.09	.05½
Pomegrant Bark of Root, bags	lb.						
Bags	lb.	.25	.44	.44	.25	.25½	.12
Bark of Fruit, bags	lb.	.30	.....	.30	.30	.30	.06
Bark of Tree, bags	lb.	.21	.....	.21	.21	.21	.....
Poppy							
Poppy Flowers, Red, bags	lb.	.60	.65	.65	.60	.60	.40
Heads, bags	lb.	.50	.....	.50	.50	.50	.25
Seed, Dutch, bags	lb.	.11	.12	.12	.11	.13	.06½
German, bags	lb.	.10	.....	.10	.10	.10	.....
Blue Indian, bags	lb.	.10½	.....	.10½	.10½	.10½	1917
White, Indian, bags	lb.	.25	.....	.25	.25	.25	1917
Prickly Ash Bark, Southern, bags	lb.	.14	.16	.16	.14	.14	.14
Southern bags	lb.	.13½	.14	.16	.13½	.14	.14
Northern, bags	lb.	.20	.25	.25	.20	.21	.25
Berries, bags	lb.	.14	.15	.15	.14	.14	.08
Prince's Pine, bales	lb.	.12	.13	.13	.12	.12	.30
Pulsatilla, Herb, bags	lb.	.16	.25	.25	.16	.16	.12
Pumpkin Seed, bags	lb.	.06½	.....	.06½	.06½	.06	.06½
Quassia Chips, bags	lb.	.36	.....	.36	.36	.44½	.11
Quebracho, bulk, 125 lb bbl	lb.	.07½	.09	.09	.07½	.07½	.....
Queen of the Meadow, Herb	lb.	.07	.08	.08	.07	.07	.07
Root, bags	lb.						
Quince Seed bags	lb.	.65	.75	.75	.65	.60	.60
Cape, bags	lb.	1.25	1.50	1.50	1.25	1.16½	.56
Rape Seed, South American bags	lb.	.04½	.05	.05	.04½	.05	.....
Dutch, bags	lb.	.05½	.06	.06	.05½	.08	.....
Japanese, small bags	lb.	.06½	.07	.07	.06½	.06½	1916
Raspberries, Dried, bbls	lb.	.85	.....	.85	.85	1.03	.27
Red Saunders, bags	lb.	.08	.....	.08	.08	.08	.....
Ground	lb.	.12	.....	.12	.12	.12	.....
Rhatany Root, bags	lb.	.11	.12	.12	.11	.10	.11
Rhubarb Root, HR, cases	lb.	.43	.45	.45	.43	.45	.21
Powdered, bbls	lb.	.59	.53	.53	.50	.56	.....
Rosemary Leaves, bales	lb.	.05	.06	.06	.05	.05	.03
Flowers cases, bales	lb.	.25	.30	.30	.25	.25	1918
Rose Petals, pale	lb.	.38	.....	.38	.38	.30	.18
Red	lb.	1.80	2.20	2.20	1.80	1.85	1.75
Rue, Herb, bales	lb.	.18	.20	.20	.18	.18	.08½
Sabadilla Seed, bags	lb.	.30	.25	.35	.30	.33	.15
Powdered, bbls	lb.	.32	.33	.33	.32	.39	.....
Saffron							
Saffron Flowers, American, bales	lb.	.36	.38	.38	.36	.39	.44
Valencia, 1 lb cans	lb.	15.00	16.00	16.00	15.00	17.00	11.50
Sage Dalmatian, bales	lb.	.05½	.....	.05½	.05½	.06	.04
Greek, bales	lb.	.04½	.....	.04½	.04½	.04½	1918
Sandarac Gum, 300 lb bbls	lb.	.30	.35	.35	.30	.30	.19
Sarsaparilla Root, Honduras, bales	lb.	.52	.....	.52	.52	.....	.65
Mexican, bales	lb.	.27	.29	.29	.27	.34½	.30
Sassafras Bark, Ordinary, bales	lb.	.16	.17	.17	.16	.15	.12
Select, bales	lb.	.26	.27	.27	.26	.26	.16
Savory Leaves, bales	lb.	.08	.09	.09	.08	.08	.03½
Saw Palmetto Berries, bags	lb.	.17	.20	.20	.17	.64	.09
Scammony Resin, boxes	lb.	1.30	1.35	1.35	1.30	1.30	1.75
Root, bags	lb.	.08½	.....	.08½	.08½	.08½	1918
Senega Root, bags	lb.	1.27	1.30	1.30	1.27	.90	.50
Senna							
Senna Alex., 150 lb cases	lb.	.25	.30	.30	.25	.23	.35
Half leaf, 150 lb cases	lb.	.13	.15	.15	.13	.13	.30
Sifting, 400 lb bales	lb.	.10½	.11	.11	.10½	.10½	.13
Pods 350 lb bbls	lb.	.17	.18	.18	.17	.....	.....
Powdered, 200 lb bbls	lb.	.16	.17	.17	.16	.17½	1918
Tinnevelly, Bold, 350 lb bbls	lb.	.17	.20	.20	.17	.17	.06
Medium Leaf, bbls	lb.	.12	.13½	.13½	.12	.12	.08½
Small Leaf, bbls	lb.	.07½	.08½	.08½	.07½	.07½	.....
Pods, 350 lb bbls	lb.	.11	.13	.13	.11	.....	.05
Powdered, 200 lb bbls	lb.	.11	.13	.13	.11	.10½	1918
Serpentaria Root, bags	lb.	.75	.77	.77	.75	.76	.42

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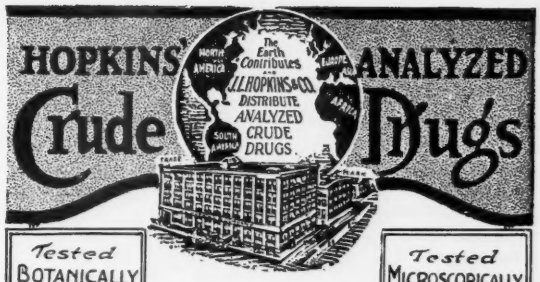

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and latest sales were made at 30c @ 35c per pound.

Lycopodium — The first week of the year has seen a fair demand for lycopodium and prices vary as to quantity and source, ranging 74c @ 85c per pound.

Manna — Recent sales of small flake manna have absorbed a good portion of the supply and some sellers are out of the market. One supplier names 55c per pound as the price and the temporary spot shortage will probably result in higher prices. The large flake remains in fair demand at 70c per pound while sorts are somewhat neglected and sell at 50c per pound. Southern Europe is well supplied and the Hamburg market is reported to be steady.

Myrrh Gum — There is a decided shortage of supplies in the spot market and the prospects of immediate replacements are not very promising. Two weeks ago the market ascended to 48c per pound and the latest sales were made at 60c @ 62c per pound. It is understood that the bulk of recent replacements have been deficient in quality and have been refused admittance by the Department of Agriculture. Only one seller is known to have supplies and prices will probably advance further, corresponding with the absorbtion of stocks.

Nux Vomica — Nothing further has been heard in the form of a price change but the primary market is still reported to be in a firm state and the current demand is lively at 5c @ 5½c per pound for whole buttons.

Olibanum Gum — The recently established prices held steadily over the period under review and buyers evidenced heavy interest in quotations for all white tears at 25c @ 26c per pound.

Pink Root — Is firmly priced at 62c per pound and the supply remains in small quantities. Replacements are difficult to obtain and while the demand proceeds normally, no downward movement is expected.

Princes Pine — Most of recent sales have been made on a basis of 15c per pound is still being done openly and available from several quarters.

Quebracho Bark — The local market has again precipitated. A decline of one cent per pound took place early in the week and reflects in the weakening position of the primary market.

Senega Root — Primary market suppliers still adhere to their high prices and are aided by the lively export demand. There have been heavy amounts shipped to China and Japan but the domestic demand is very light. The lowest figure available is $1.27 per pound and $1.30 @ $1.32 per pound has been done.

		Current Market		1928 High	1928 Low	1927 Aver.	1914 July
Shellac, T. N., bags	lb.	.57	.58	.58	.57	.50	.15½
Simaruba Bark, bales	lb.	.08	.....	.08	.08	.07½	.11
Skullcap Leaves, Eastern, bales	lb.	.33	.40	.40	.33	.45	.15
Western, bales	lb.	.23	.26	.26	.23	.23	.....
Skunk Cabbage, Stripped, bales	lb.	.14	.15	.15	.14	.12½	.10
Snake Root, Canada Natural, bags	lb.	.27	.30	.30	.27	.28½	.14
Canada, Stripped, bags	lb.	.55	.....	.55	.55	.55	.40
Soap Bark, 150-200 lb bbls	lb.	.14	.....	.14	.14	.13	.09
Cut, 125-175 lb bags	lb.	.17	.....	.17	.17	.15	.10½
Crushed, 200 lb bbls	lb.	.16	.....	.16	.16	.15	.09½
Powdered, bbls	lb.	.18	.....	.18	.18	.17	.....
Spearmint Leaves, American, bales	lb.	.25	.30	.30	.25	.23	.15
Herb, bales	lb.	.14	.....	.14	.14	.14	.....
Spermaceti, blocks, cakes, cases	lb.	.32	.35	.35	.32	.32	.....
Spikenard Root, bags	lb.	.23	.....	.23	.23	.17	.10
Squaw Vine, bales	lb.	.20	.....	.20	.20	.18	.08
Squills, White	lb.	.10	.....	.10	.10	.06	.04
Powdered, bulk	lb.	.15	.....	.15	.15	.13	1918
Stavesacre Seed, bags	lb.	.18	.19	.19	.18	.17	.10½
Stillingia Root, bags	lb.	.12	.....	.12	.12	.22	.06
Stone Root, bags	lb	.08	.09	.09	.08	.08	.06
St. Ignatius Beans, bags	lb.	.14½	.15	.15	.14½	.15	.18
St. John's Bread, bags	lb.	.14	.14½	.14½	.14½	.14	.06
Stramonium							
Stramonium Leaves, bales	lb.	.17½	.18	.18	.17½	.18	.07½
Seed, bags	lb.	.07½	.....	.07½	.07½	.07½	.08
Strophanthus Seed, Hispidus	lb.	.07½	.....	.07½	.07½	.07½	.08
Kombe, bags	lb.	2.00	2.25	2.25	2.00	1.98	.40
Styrax Liquid, Artificial	lb.	.26	.35	.35	.26	.26	.18
Genuine, USP	lb.	.36	.45	.45	.36	.36	.18
Sunflower Seed, bags	lb.	.06½	.06	.06½	.06	.08	.04
South American, bags	lb.	.06	.....	.06	.06	.06	.....
Tagalder Bark, bags	lb.	.05	.06	.06	.05	.05	1918
Tamarinds, bbls,	lb.	.05½	.06	.06	.05½	.05½	.04½
Kegs	keg	3.85	.....	3.85	3.85	3.82	2.40
Tansy, Herb, bales	lb.	.11	.14	.14	.11	.11	.07
Tar, Barbadoes, 50 gal bbls	lb.	1.40	1.45	1.45	1.40	1.40	.....
Thus Gum, 280 lb bbls	lb.	.11¾	.20	.2[illegible]	.11¾	.11¾	.03½
Tilla, see Linden							
Thyme							
Thyme, Spanish, bales	lb.	.08½	.09	.09	.08½	.08½	.07
French, bales	lb.	.08	.....	.08	.08	.08	.....
Tolu Balsam, see Balsams	lb.						
Tonga Bark, bags	lb.	.55	.....	.55	.55	.70	.40
Root, bundles	lb.	.55	.....	.55	.55	.66	.38
Vine, bundles	lb.	.55	.....	.55	.55	.66	.38
Tonka Beans, Angostura Cases		1.90	2.00	2.00	1.90	1.90	.....
Para cases	lb.	.90	.....	.90	.90	.90	.....
Surinam cases	lb.	1.25	1.50	1.50	1.25	1.25	1.10
Tragacanth Gum No. 1 100 lb cases	lb.	1.55	1.60	1.60	1.55	1.55	1.10
No. 2	lb.	1.40	1.50	1.50	1.40	1.40	.80
No. 3	lb.	1.25	1.30	1.30	1.25	1.25	.65
Powdered 50 lb boxes	lb.	.85	1.10	1.10	.85	.85	.....
Turkish cases	lb.	.45	.....	.45	.45	.45	.85
Turmeric Root Madras bags	lb.	.06	.06½	.06½	.06	.06	.04½
Aleppy bags	lb.	.06½	.07	.07	.06½	.06½	.04½
Powdered	lb.	.10	.13	.13	.10	.10	.....
China bags	lb.	.09	.09½	.09½	.09	.09	.03½
Turpentine Venice True, 80 lb cases	lb.	.32	.40	.40	.32	.32	.23½
Artificial, 80 lb cs	lb.	.17	.....	.17	.17	.17	.08½
Unicorn Root, False, see Hellonias True, see Aletris							
Uva Ursi Leaves, bales	lb.	.06	.07	.07	.06	.05¾	.03½
Valerian Root, Belgian, bags	lb.	.17	.18	.18	.17	.28	.07
Vanilla Beans, Mexican, whole, cases	lb.	3.25	4.00	4.00	3.25	4.50	4.00
Cuts, cases	lb.	2.50	2.75	2.75	2.50	2.75	3.12½
Bourbon, cases	lb.	2.00	2.75	2.75	2.00	2.30	3.37½
South American, cases	lb.	2.50	2.75	2.75	2.50	2.65	3.50
Tahiti, Green, label cases	lb.	2.25	2.50	2.50	2.25	2.37½	2.25
Vetivert Root, 100 lb bags	lb.	.30	.....	.30	.30	.33	.....
Violet Flowers, bags	lb.	.70	.....	.70	.70	.77½	.33
Wahoo Bark of Root, bags	lb.	.60	.62	.62	.60	.60	.42
Bark of Tree, bags	lb.	.30	.....	.30	.30	.31	.15
White Pine Bark, Roseed, bags	lb.	.08	.....	.08	.08	.07½	.04
White Poplar Bark, bags	lb.	.06	.07	.07	.06	.06	.03½
Wild Cherry Bark, Thin, Green	lb.	.....	.....	.....	.....	.....	.07
Roseed, bales	lb.	.11½	.12	.12	.11½	.11½	.08
Thick Roseed, bales	lb.	.09	.....	.09	.09	.09	.....
Thin Natural, bales	lb.	.07½	.08	.08	.07½	.07½	.07
Thick Natural, bales	lb.	.05	.06	.06	.05	.05	.06
Wild Indigo Root, bags	lb.	.13	.14	.14	.13	.13	.....
Willow Bark, bags	lb.	.06	.....	.06	.06	.06	.07
White, bags	lb.	.15	.....	.05	.15	.15	.....
Witch Hazel Bark, bags	lb.	.06½	.08	.08	.06½	.06½	.03½
Leaves, bales	lb.	.08	.09	.....	.....	.08	.06
Wormseed, American, bags	lb.	.20	.....	.20	.20	.15½	.09½
Levant, bags	lb.	.....	.....	.....	.....	3.81	.36
Wormwood, Herb, Imp, bales	lb.	.10	.10½	.10½	.10	.09	.07
Yellow Root (Zanthorza), bags	lb.	.14	.....	.14	.14	.14	.....
Dock Root, bags	lb.	.10	.11	.11	.10	.09½	.06
Perilla Root, bags	lb.	.14½	.....	.14½	.14½	.14½	.08
Yerba Mate, bags	lb.	.18	.20	.20	.18	.18	.....
Santa, bags	lb.	.09½	.11	.11	.09½	.09½	.08
Zedoary Root, bags	lb.	.06½	.07	.07	.06½	.06	.04½

Absorbs more water and yields a smoother finished product than any other brand.

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Import and Export Summary

IN the February issue, and regularly thereafter we will publish on this page a complete accumulative record of all American imports and exports of fine chemicals, crude drugs, and essential oils. This will cover the figures of the month just past and give the total of the year to date. It will be closely itemized by products and will cover the ports of New York, Boston, Philadelphia, Baltimore, Norfolk, Charlestown, Savannah, New Orleans, San Francisco and Seattle. This inclusive record is supplied to us by the Bureau of Economic Chemistry whose announcement opposite is of pertinent interest to all readers interested in imports or exports.

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THREE times a week--Monday, Wednesday and Friday--you can now secure a complete confidential bulletin on chemical and drug imports and exports at all the important American ports. This service gives you the product, packing, weight, port of origin, ship, and the consignee. It is mailed under sealed, first-class mail---if time is a special consideration for a fee to cover extra postage it will be sent to you "special delivery" or "air mail." For your convenience this service is divided into four parts:

Bulletin 1—Chemicals—
Covering heavy and fine chemical raw materials, dye and tan stuffs, pigments, fillers, sizes, naval stores, insecticide and fertilizer raw materials.

Bulletin 2—Oils and Fats—
Covering all the animal, vegetable, and fish oils, fats, greases and fatty acids.

Bulletin 3—Drugs and Spices—
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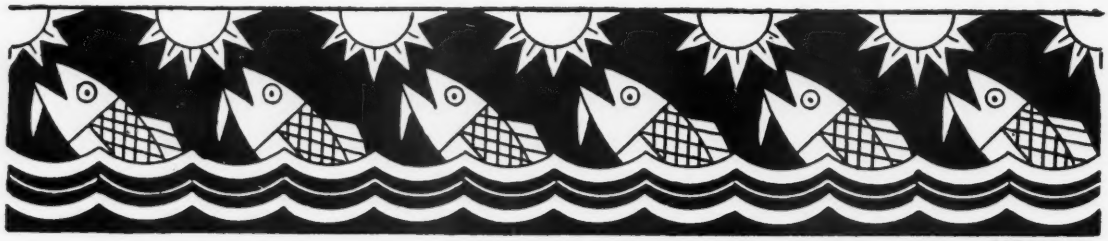

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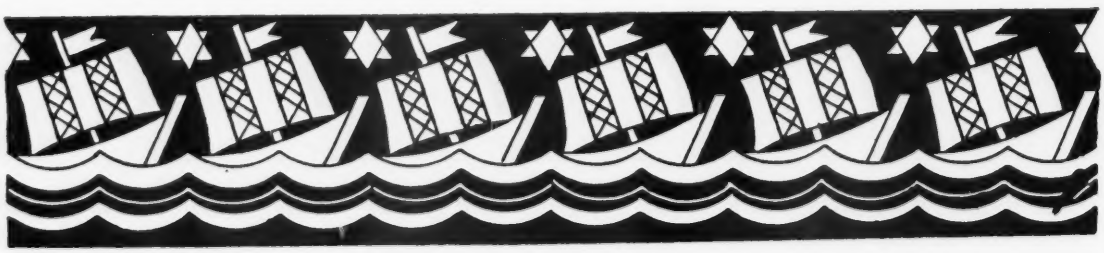

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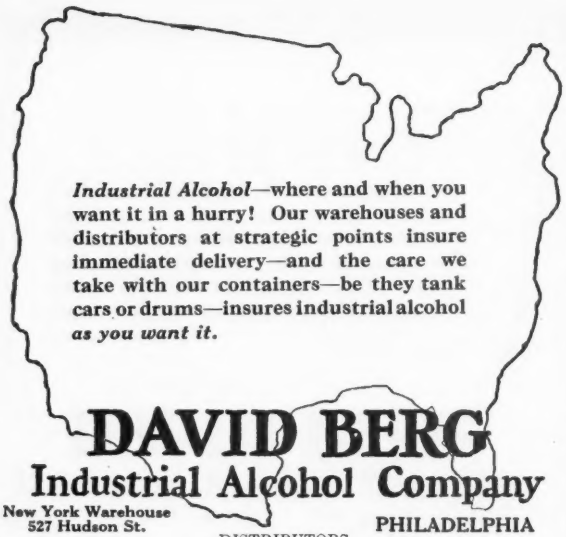

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An oil soluble local anesthetic employed in cough troches; toothache and earache remedies, suppositories, ointments, nasal creams, sprays, nausea tablets, etc.

Leaflets and formulas supplied on request.

In shaving creams and other preparations for the skin, Benzocaine is of value in allaying irritation.

SEYDEL CHEMICAL COMPANY

Jersey City, N. J. Nitro, W. Va.

Established 1904

Distribution

(*Continued from page 22*)

sity for a Census of Distribution comparable with the Census of Manufactures.

Figures concerning population which now are supplied by the Census are an indispensable factual basis for all reasoning about people. All work in market study starts with these figures as a foundation. Similarly, the Census figures of production—manufacturing, agriculture, mining—are basis figures concerning the creation of goods for general consumption.

Hitherto, distribution, the essential mechanism by which goods as produced are conveyed to consumers has had no place in official figures. The census of Distribution begun in Baltimore and extended to ten other cities—(Atlanta, Chicago, Denver, Fargo, Kansas City, Providence, San Francisco, Seattle, Springfield, (Illinois) and Syracuse is the first step toward filling this great gap in our official figures. Merchants, economists, manufacturers, advertising men, newspaper men, in fact, all who are interested in commercial or industrial growth will welcome this first mathematical picture of the distributing equipment in some of the chief cities of the country.

Secretary Hoover on September 23rd gave an interview indicating that he would like to see a national and comprehensive census taken in 1920 on the distribution of commodities and expressed the belief that when such a course is taken, it will enable manufacturers to gauge production and distribution so as to avoid glutting particular markets and eliminate channels of distribution that are unnecessary.

Business leaders in many fields have added their endorsement saying that a national census would result in more economic and less wasteful distribution throughout the industry.

Drug Industry Must Select

The drug industry will benefit from authoritative facts of this character. It will be able to determine the type of wholesaler or retailer whose chance for success is brightest—for no manufacturer or wholesaler desires of his own volition to deal with those intermediaries which cannot operate successfully. So closely are the various elements of industry interwoven that the success of one is reflected in the success of the other; and conversely, the failure of one reacts to the detriment of the other. The direct relation of the drug industry to the highest per capita standard of living in history must be reflected in the selection of profitable channels of merchandising; in the selection of profitable customers (which involves the determination of minimum orders on the part of manufacturers and wholesalers); the concentration in territory, the business from which will not result in loss. In other words, the drug industry, as well as

every other industry must be alert in separating the wheat from the chaff; the inefficient from the efficient, and the profitable from the unprofitable. This can be only done by utilizing the available tools in the form of cold facts and figures, and in their proper interpretation and use. There is no need for shutting down plants in order that production may be restricted solely to fill the demands which are readily discernible. The industry, which is to prosper and continue to prosper is that which by scientific research and intelligent planning can increase the sales of its products in the commonly accepted fields and, at the same time, find new fields and uses for its output. This era of intense competition no longer permits the business man to just "keep shop." It demands efficient and wide awake merchandising with keen perception of future development. The theory of the survival of the fittest is still with us.

Returned Goods

(*Continued from page 37*)

pride of all concerned in making a high quality product. If the experience of this company is general, then it will be found that the reduction of the returned goods evil lies largely within the scope of the companys' own efforts.

Where it is evident that the goods are returned because of some fault of the company, the customer gets full credit for the goods. Where the causes are beyond the control of the company credit is allowed in exceptional cases only.

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LIGHTNIN

PORTABLE MIXERS

will process any product that will flow

QUICKER *and* BETTER
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SIMPLE — ECONOMICAL — DEPENDABLE

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Originators and the World's Largest Manufacturers of Electric Portable Mixers
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Pharmaceutical Standardization

(Continued from page 32)

tions from p_H 2 to p_H 10. Excess acidity or alkalinity result in rapid deterioration, but no deterioration within two years was noted when the tincture was neutral. As normally made tincture of digitalis is not neutral.

Another example of stabilization is the use of a slight amount of acid and acetanilide to prevent decomposition of hydrogen peroxide solution. But since the decomposition of the acetanilide gives rise to an objectionable odor and taste in some cases, it would seem that a further study along this line would be valuable.

Unsolved Problems

From the above discussion it will be seen that the preservation of drug products has received a full share of attention in the past. However, it is recognized by leaders in pharmaceutical research that one of the greatest problems of the near future is the stabilization of pharmaceutical preparations. This is evidenced by the large number of such problems suggested for study in preparation for the U. S. P. XI in the list published by the committee of revision of the United States pharmacopoeia. Among the problems suggested are the following:

1. The manufacture of spitit of ethyl nitrate. A study of methods of manufacture, especially with a view of greater stability is desirable.
2. Solution of epinephrine hydrochloride. (The committee suggests that a study be made of the degree of acidity, amount and nature of preservative, amount and nature of reducing agent to keep epinephrine from oxidation, etc. Some manufacturers are adding chlorobutanol or other substances as preservatives.)
3. Potassa sulphurata. A study should be made of its decomposition on aging and the possibility of stabilizers being introduced.
4. Extract of malt. The rate of deterioration should be studied and the assay improved, if possible.

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Anesthesia Concentrated
Technical

For Seventy Years Manufacturing
Medicinal Drugs and Chemicals

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5. Stability of pharmaceutical preparations. This should be studied from the standpoint of two factors: (a) natural composition, (b) external influences.
6. Deterioration in drugs due to enzymes.
7. The functions and value of adjuncts to menstrua.
8. The effect of hydrogen ion concentration upon the stability of tinctures, fluidextracts and extracts.
9. Preservation of U. S. P. drugs and preparations:
   (a) oxidation and reduction (ferrous salts, phenols, aldehydes, etc.)
   (b) hydrolysis (tannins, sugars, glucosides, acetylsalicylic acid, etc.)
   (c) acid and alkaline reactions (pepsin, bismuth, glandular preparations)
   (d) catalytic decomposition (H_2O_2, fats, oils, etc.
   (e) light effects (galenicals, some alkaloids, phenols)
   (f) exposure effects other than oxidation (CO_2, absorption, volatility, etc.)

Although great progress has been made in the scientific preservation of drug products, the results obtained have served as an inspiration for further researches, and there is every reason to believe that progress in this field will continue.

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Send for price and market information now, whether you are in the market or not, so we can keep you posted.

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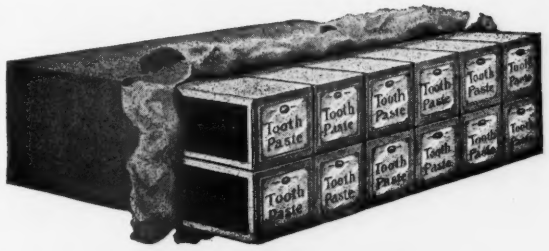

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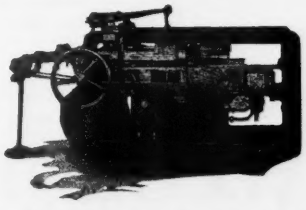

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ALCOHOL

FOR ALL AUTHORIZED PURPOSES

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Cincinnati Ohio

Send for copy of our Red Booklet — 8th Edition.

Iodine

(Continued from page 34)

pound. Assuming that with the object of penetrating this market, foreign suppliers could reduce their prices radically, it is highly doubted that they could profitably compete with this low operating cost. The sales policies of the Japanese are similar to those of the Chilean sellers in that both advocate a wide margin of profit. Iodine retails in Japan at a price equal to $3.50 per pound.

Production on the island of Java is next in relative importance. There iodine is obtained in a liquid condition from natural iodiferous water. However, its availability is extremely limited, being disposed of locally throughout the Orient and Europe. This material has not appeared in our market during the past ten years. In Russia, the familiar Baku oil fields yield iodine emitted from waste waters from oil drillings. The quantity of iodine available from this source is of no importance on the world market. In fact, the actual amount obtained is only 4 kilos daily.

Thus far the production in the United States has not been very encouraging. In 1902, the vast deposits of kelp on the Pacific coast attracted wide attention as a source of potash, and iodine was extracted as a by-product of potash. Fond hopes were placed in the success of this venture but the minute iodine content of the weed made the attempt commercially unsuccessful. The meager yield of only 20 pounds of iodine from 100 pounds of kelp proved disappointing, but for a time the newly conceived industry was carried on. During the war when Germany was closed to this country as a source of potash, prices were high and production on the coast was a commercially profitable enterprise. The industry flourished during the reconstruction period immediately following the war, as the increased demand for potash salts kept prices inflated. This flurry, however, was short lived and the entry of low-priced German potash permanently discouraged producers and caused a cessation of activities. The remaining sources of domestic iodine supply also proved valueless. One company endeavored to extract iodine in the process of manufacturing calcium acetate but soon abandoned the idea. Furthermore, traces of iodine were found in the borax deposits of Utah; but here too, production was found economically impossible. Another attempt at production in Florida was without avail and consumers returned to foreign sources for their supplies.

An unusual situation is presented in the price of iodine. It has remained at the same identical level since some time prior to the war without the slightest variation despite the tremendous increase in consumption during the war period. From this fact it is evident that there must be an enormous profit in the manufacture and sale of iodine at these prices and

also that an invulnerable monopoly exists. The former has been admitted and the latter is common knowledge. This monopoly is feebly disputed and Chile attains a position of aloofness and independence, and while in this position it is possible that the price of iodine may be advanced rather than decline.

Serious curtailment in production of the primary raw material, sodium nitrate, of which iodine is a by-product, has occurred during the past year. This has been the result of large synethic ammonia plants arising in the principal countries of the world with the result that practically all the leading nations have an exportable surplus of ammonia. The reason why ammonia has curtailed nitrate production is that ammonia is readily convertible into nitrate and also because it is readily adaptable as a fertilizer, which forms the principal use for sodium nitrate.

Despite this curtailment, there is still available from present operations far more iodine than the world today consumes, so there is no danger of a shortage of supplies causing an advance in price. However it is perfectly possible that the Chilean producers, who have been seriously handicapped financially by the decline in their business, might seek additional compensation for their products by advancing the price of iodine—the only product that could be advanced. The return from iodine, however, is such a small part of the total of their sales that they might not consider this step worth while.

A remote means of challenging the monopoly of Chile lies in iodine in the sea. The ocean has been estimated to contain sixty billion metric tons of iodine, and both the Adriatic and California sea waters have been proven to contain .05 milligrams per liter. While no method of recovery has been undertaken for this iodine, it only a short time back that the duPont company successfully launched a ship to recover bromine from sea water. If, as with bromine, a future avenue of consumption should develop large enough to demand greater supplies of iodine than are now available, it is plausible to suppose that a similar process could be developed for iodine production from this very fertile source.

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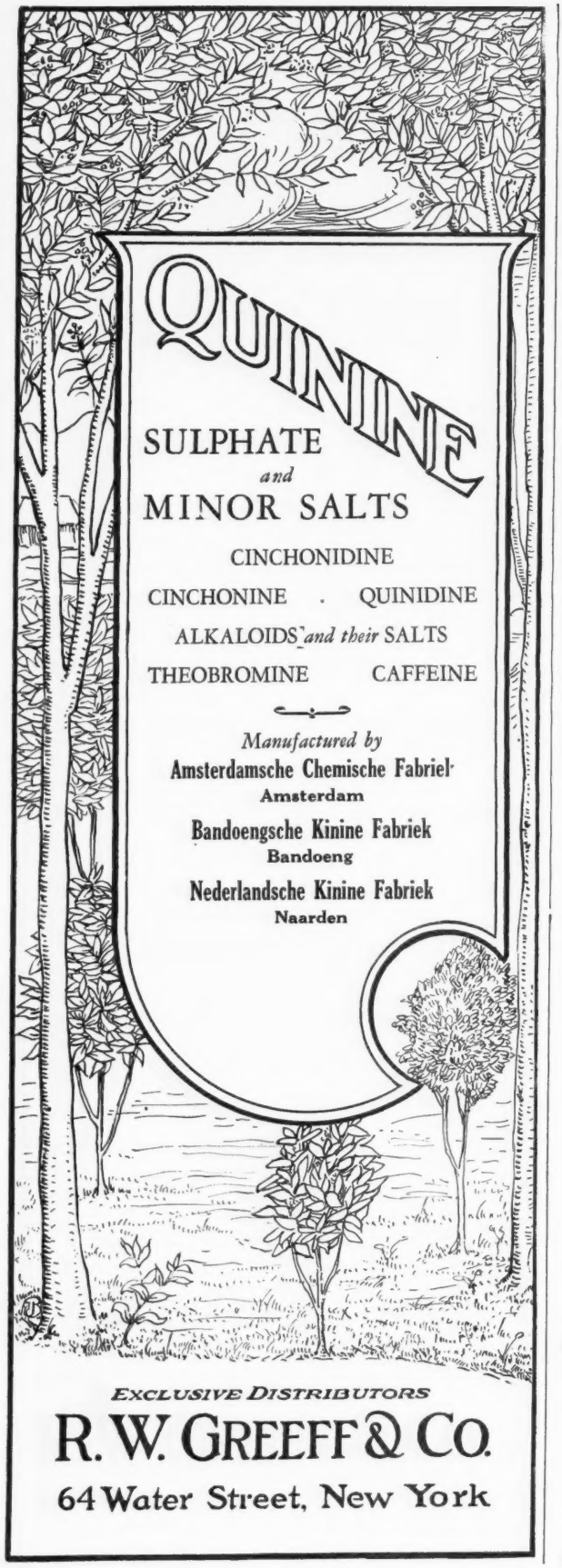
Holbrook, Mass.
St. Louis, Mo.



ERGOT

(Continued from page 40)

As the Russian crop for the past two years was undersized and of poor quality, a repetition of this condition was counted on this year for the success of the speculative movement. However, it is reported the crop being of fair size, and shipments having already entered the country, passed by the Department of Agriculture.

Their cries of accusing the regular importers of selling trash, are regarded as trash in themselves and they should soon realize the utter uselessness of their attacks against the Government. Their inflated prices have been undersold by a wide spread and the larger consumers have covered for their requirements.

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Contracting -- Flexible
U.S.P.
Amyl Acetate Curtis
Made for Medicinal Use at Newark, N. J.
FOR SEVENTY YEARS
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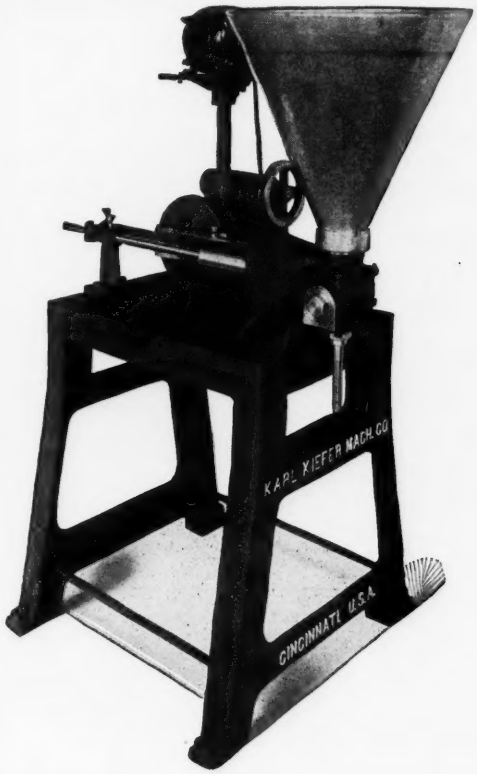

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—perfectly—

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The Drug Market-Place — Wants and Offers

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INDIAN DRUGS AND HERBS. We desire to export these to U. S. A. Will importers or brokers kindly write to India Agencies m.b.h., 16, Spitaler Street, Hamburg, Germany.

HAMBURG—We desire to export European Crude Drugs to U. S. A. Importers or brokers may apply to Dr. Schorr & Erwin Renyi Kommanditgesellschaft, Hamburg 36, Gr. Theaterstr. 41.

ESSENTIAL OIL IMPORTERS interested in oils produced in Palestine. These oils have long been exported to Europe and then to U. S. Direct connections desired. Oils of highest purity. Now producing thyme, organum, jasmin, and geranium. W. Schocher & Co. Care of T. M. Charlop, 926 Bronx Park South, New York City.

SALESMEN wanted who have an established trade with doctors and druggists in your territory, to sell an ethical indigestion powder called Cal-So-Gin, excellent side line, commission basis. Write for particulars. Lincoln & Bosworth, Chemists, Providence, R. I.

PROPRIETARY AND TOILET LINES—Manufactured to your formula—or will submit samples from our own formula—for sale in bulk—or finished ready for sale—Patent and Proprietary Preparations — TOILET AND BATH POWDERS, ROUGES—with guarantee of highest quality. Costs nothing to compare our samples and prices with others—The Cra Craft Laboratories—Represented by T. A. Hedley, 53 Park Place, New York City.

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GRADUATE CHEMIST, age 31, married, with 10 years experience as an executive in sales and manufacturing chemicals and specialties desires connection in the metropolitan district. Box 680 DRUG MARKETS.

SALES MANAGER now engaged. Well known and personally acquainted with wholesale drug, pharmaceutical and proprietary manufacturers throughout the country seeks new connection or sales agency for specialty preferably. Future opportunity paramount immediate recompense secondary. Box 677, DRUG MARKETS.

YOUNG MAN, 25 years experience as pricer, buyer, and department head in wholesale drug house wishes permanent connection. Could be sales manager in small house or assistant in large one. Services available January first. Located in the West at present. Box 676, DRUG MARKETS.

CHEMIST, middle-aged, wants part time employment. Research either laboratory or literary. Wide variety of subjects including fermentation. Box 672, DRUG MARKETS.

REPRESENTATIVE—Engineer available for firm not having New York office for transaction of business in sales, purchasing and settlement. Competent service given on yearly rate. Box 671, DRUG MARKETS.

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SALESMAN WANTED for New York City and representatives for other cities for products going to following industries: toilet preparations, textiles, patent-medicine, flavoring extract, tobacco, inks, garages, etc. To men with following in any of the above lines an attractive proposition is waiting. Replies will be held in confidence. Box 679, DRUG MARKETS.

PHARMACEUTICAL CHEMIST, with real executive ability to have complete charge of manufacturing as superintendent of laboratory. Must be well educated and have wide experience and a thorough practical knowledge of Pill and Tablet manufacture as well as pharmaceutical manufacturing in general.

To a man who can qualify we offer a good position with excellent future. Write giving detailed information as to education, experience and references. All correspondence strictly confidential. Box 667· DRUG MARKETS.

YOUNG MAN, sales experience in drug or chemical trade wanted by one of the largest and oldest houses in the trade. Must have good personality. Exceptional opportunity as assistant to manager of rapidly growing department. Box 682, DRUG MARKETS.

SALESMAN—Experienced in selling Essential Oils, Flavors, Perfume materials to manufacturers, etc. Box 672, DRUG MARKETS.

SALESMEN—retail drug trade—sell new perfume novelties. Liberal commissions. State reference, particulars, territory covered. Box 681, DRUG MARKETS.

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SALES AGENTS WANTED—Manufacturer of Pharmaceuticals, Chemicals and Specialties wants Sales Agents to sell on commission basis to manufacturers, jobbers and chain store buyers. Representatives wanted in Chicago, Boston, Philadelphia, Cleveland, Los Angeles and other large cities. References required. Box 682 DRUG MARKETS.

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LOBELIA to offer. Choice bright matured herb from the mountains right where it grows. Buy from headquarters. Samples on request. HAMILTON BACON HAMILTON CO., Bristol, Va.

FOR SALE—New Ermold Labeling machine, never used, with General Electric A. C. motor. Certone Company, 473 Hudson Ave., Brooklyn, N. Y.

TOILET PREPARATIONS — PERFUMES. Expert French perfumer will make for you any high grade perfume or beauty product, in bulk or at your name, samples sent at request. Guaranty satisfaction. G. Coquel, 16 Edgewood Circle, Quincy, Mass.

DENTAL PLASTER—Please quote c.i.f. price in 500 barrels, shipments to be made in 100 barrels monthly. Firm established in 1885. Bank reference, The First Bank, Limited, Tokio. Ichinosuke Kuroda & Co., 7 Setomonocho, Nihonbashiku, Tokio.

ALOES—Export f.o.b. Curacao, also divi divi. Address Karel Croes, Commission Agents, Aruba, Danish West Indies.

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WANTED—all forms of SUPPOSITORY moulds and power machines. Southport Chemical Co., 261 Greenwich St., New York City.

FOR SALE: 30 drawer 3 x 5 Card files; Vertical letter files; General Electric Induction Motor, 3 phase, 220 volts, 2 horse power, 1200 revolutions, with starting switch, practically new. J. T. Lowery, 600 N. Eastern Avenue, Joliet, Ill.

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Thirteenth and Washington Streets,
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WANTED—One Oliver Filter Press, acidproof, about five feet diameter, without washing outfit; one Oliver Filter about the same dimensions, with washing outfit, both to be equipped with complete acid-proof centrifugal pumps, vacuum receivers, vacuum pumps and moisture trap. Further, one Filter Leaf acid-proof Basket with about six filters. Box 614, DRUG MARKETS.

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The Bradley Ball Stencil and Marking Pot.

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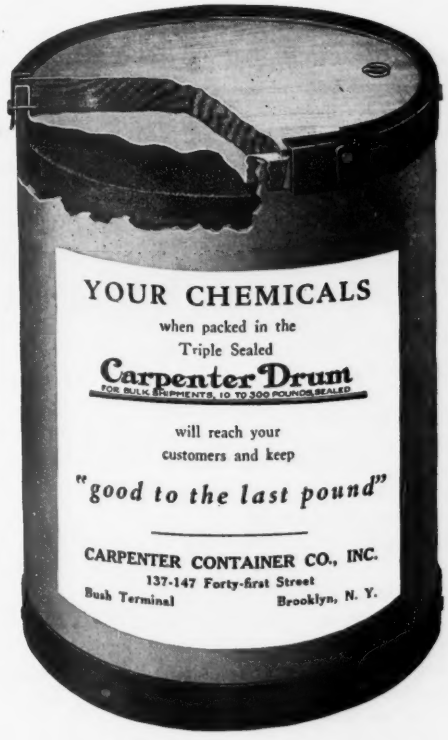

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4—Colton Tube Closers and Clippers.
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Barclay 0603

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Federal Products Co.
Industrial Chemical Co.
Kentucky Alcohol Co.
National Industrial Alcohol Co., Inc.
The Rossville Company
Seaboard Chemical Co.

AROMATIC CHEMICALS
Dodge & Olcott
P. R. Dreyer, Inc.
Benj. French, Inc.
Fries & Fries Co.
Fritzsche Bros.
Givaudan Delawanna, Inc.
Morana, Inc.
N. W. Chemische Fabrik Naarden
Pfaltz & Bauer
Rhodia Chemical Co.
Ungerer & Co.
Wangler-Budd Co., Inc.
Van Dyke & Co.

BEESWAX
Will & Baumer Candle Co., Inc.

BIOLOGICAL CHEMICALS
Wilson Laboratories

BORAX
American Potash & Chemical Corp.
Pacific Coast Borax Co.

CHALK, PRECIPITATED
H. F. Baker & Bros.
Hammill & Gillespie
R. Hillier's Son Co., Inc.
Industrial Chemical Co.

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H. J. Baker & Bro.
W. Benkert & Co., Inc.
P. R. Dreyer

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Baird & McGuire, Inc.

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Morana Inc.
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Pfaltz & Bauer
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Ungerer & Co.
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Fritzsche Bros.
Fries & Fries
Morano, Inc.
N. W. Chemische Fabrik Naarden
Ungerer & Co.
Wangler-Budd Co., Inc.

GLYCERIN
H. J. Baker & Bro.
Will & Baumer Candle Co., Inc.

LANOLIN
B. & W. Co.
Pfaltz & Bauer, Inc.

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Chas. Cooper & Co.
Dissosway Chemical Co.
Dow Chemical Co.
Heyden Chemical Co.
Hoffman-LaRoche Chemical Works
Mallinckrodt Chemical Works
Merck & Co.
Monsanto Chemical Works
N. Y. Quinine & Chemical Works
C. B. Peters Co., Inc.
Seydel Chemical Company

MINERAL OIL
Schliemann Companies

NAPTHALINE
The Barrett Company

PETROLATUM
Pennsylvania Refining Co.

QUININE
R. W. Greeff & Co.
Mallinckrodt Chemical Works
Merck & Co.
N. Y. Quinine & Chemical Works

TALC
Hammill & Gillespie

VANILLIN
Dow Chemical Co.
Givaudan Delawanna Inc.
Mathieson Alkali Works (Commonwealth Division)
Monsanto Chemical Works

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COLLAPSIBLE TUBES
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Bond Mfg. Corporation
Sun Tube Co.
White Metal Mfg. Co.
A. H. Wirs, Inc.

CORKS
Armstrong Cork Co.

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F. N. Burt, Ltd.

BULK CONTAINERS
Carpenter Container Co.

GLASSWARE
Owens Bottle Co.

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American Metal Cap

VISCOSE CAPES
Capes-Viscose Co.

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American Machine & Foundry
The Karl Viefer Machine Co.
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MIXING EQUIPMENT
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Mixing Equipment Co.
F. J. Stokes & Co.

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American Machine & Foundry Co.

PACKING & CARTONING
American Machine & Foundry Co.
Package Machinery Co.

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STENCILING MACHINES
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Strong, Cobb & Co.

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No matter how low the nominal price of a manufacturing service may seem to be, the real cost is dependent on quality. If you can be relieved of all production responsibility, with absolute confidence that the manufacture of your product is right, and can devote your whole time and attention to sales promotion, you are effecting a genuine economy and one that insures the utmost in profits.

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We'll gladly answer your questions or submit figures. Just send us a sample of your product and tell us your problems. Or if you have only an idea, let us discuss that.

Write to-day. No obligations.

Strong, Cobb & Company, Inc.

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Cleveland, Ohio

New York Office, 30 Church Street

Tube Troubles

WHATEVER their cause, troubles with your containers reflect on the quality of your goods, and as such are not to be tolerated. They are more than a bother to the manufacturer of medicinal and toilet preparations; they are a real menace to his sales. Those manufacturers who use our Bond collapsible tin tubes avoid trouble and make their containers a real selling help. Ask us how we can help you.

Bond Manufacturing Corporation

Wilmington, - Delaware

[*Who's Who* *in the Drug Industries*]

WILLIAM ARTHUR ARMSTRONG, director of sales, Harold F. Ritchie & Co. Inc., New York City; Born: Toronto, Ontario, Canada, 8 Apr. 1887; mar: Norah V. Locke, Oakfield, Wisc.; Children: one daughter. Harold F. Ritchie & Co. Inc., sales mgr., 1920-23, sales dir., 1923 to date. Asst. Quartermaster, Canadian Y. M. C. A., Headquarters Staff, London, Eng., during the war. Memb.: Masonic Order, Scottish Rite, Mecca Temple Shrine, and Canadian Club.

FREDERICK JAMES AUSTIN, chief analyst, Richard Hudnut. Born: Superior, Mich., 1 Nov. 1874; mar.: Lois Sollitt Smith, Ann Arbor, Mich., 11 Feb., 1903; educat: Univ. Mich., 1897, post grad. 1901-2. E. R. Squibb & Sons, 1902-17, analytical & consltg. chem., 1918-9; Richard Hudnut, 1919 to date. Author of technical papers. Memb.: Amer. Chem. Soc. Chem. Ind., Am. Assn. Advance Science, Amer. Pharm. Assn. Clubs: Chemists, Church (N. Y.), Masons. Hobby: golf.

LEE HASTINGS BRISTOL, secretary and advertising mgr. Bristol-Myers Co., New York City. Born: 11 Nov. 1892, Syracuse, N. Y.; mar: Elizabeth Wigton; children: two sons; educat: grad. Hamilton Coll. Ph.B. 1914. U. S. Naval Air Service 1917-19. Memb.: Window Display Adv. Assn., (pres. 1926-28). Hobby: golf.

WALTER MERCER BRUNSWIG, vice-president, Brunswig Drug Co., Los Angeles, Cal. Born: New Orleans, La., 21 July 1887; mar: Sarah Clark, Los Angeles, Cal., 21 Jan. 1914; children: two daughters; educat: Lawrenceville, School, 2 yrs. Coll., Geneva, Switzerland. Entered firm F. W. Braun Co., 1906; succeeded by Brunswig Drug Co., 1907, second vice-pres., 1916, vice-pres. 1927. Served U. S. Army 1918. 5th vice-pres. Natl. Wholesale Druggists Assn. 1927. Clubs: Los Angeles Country, California, University (Los Angeles). Hobbies: golf, tennis, swimming.

EDWARD A. CAHILL, vice-pres., Pitman Moore Co., Indianapolis, Ind; Born: Lowell, Mass., 22 Aug. 1885; mar.: Margaret Teague, Lowell, Mass.; Children: 3 sons; educat: Univ. Penn. U. M. D., 1909. Club: Kiwanis. Hobby: golf.

ROLLY M. CAIN, pres. & general mgr., Swan-Myers Co., Indianapolis, Ind. Born: 14 Jan. 1882, Washington, Ind.; mar: Dersie A. Myers, 9 Apr. 1909, Indianapolis, Ind.; children: (2) son & daughter; educat: Daviess County Schools. Pitman-Moore Co., traveling salesman, 1905-09; Swan-Myers Co., assisted in org., in 1909; genl. mgr. pres., 1912 to date. In the fifteen yrs. as gen'l. mgr. of Swan-Myers Co., the bus has been developed from small local bus. to one nation wide in its activities with agents and dealers in many foreign countries. Active in affairs of Amer. Phor. Mfg. Assn. and served as its pres. 1923-24, since that time. as dir. Memb.: Chemb. Comm. Indianapolis, Mason, Presbyterian Church, Athletic Club. Hobbies: golf, fishing, hunting.

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Grain Alcohol

Guarantee
This is to certify that the alcohol in this package is manufactured from Grain only and is so handled in accordance with law.
THE ROSSVILLE COMPANY
ROSSVILLE COMPANY-THE

for GOULD PHARMACEUTICALS

"We can depend on ethyl alcohol
Made from Grain
to remain constant in its properties."

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The ROSSVILLE CO., Lawrenceburg, Ind.

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Rossville

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proprietors use

OWENS

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